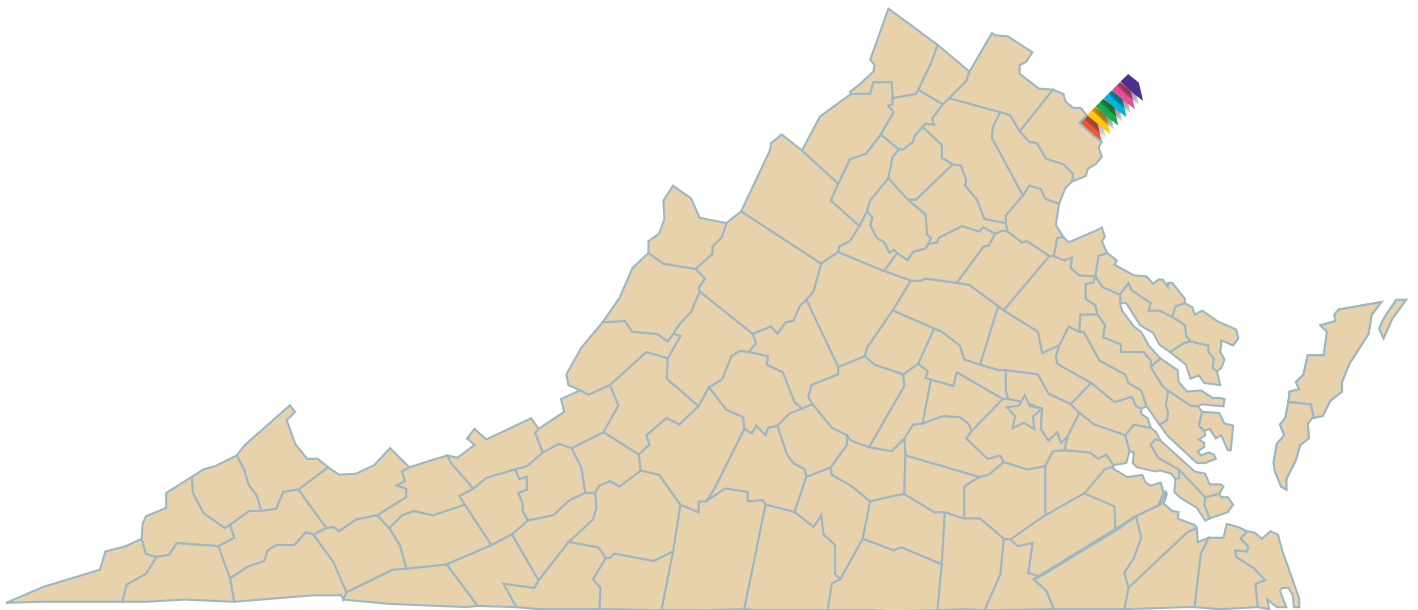
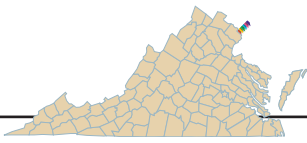


Community Profile of WIA XII

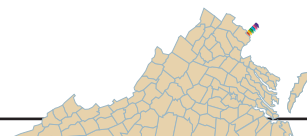
Arlington County • City of Alexandria



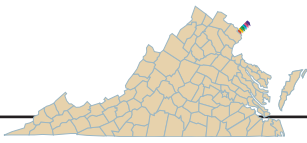


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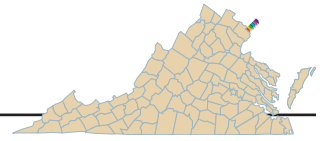
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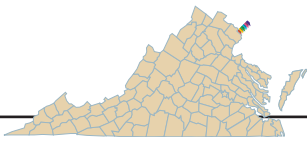


Executive Summary

This report provides a demographic, economic, and educational profile of Workforce Investment Area XII (WIA XII), Alexandria/Arlington. The purpose of these profiles is to assist on-going strategic planning efforts by providing a solid, data-driven, foundation for strategic decision-making. The primary findings from this report are:

- WIA XII's population experiences less unemployment, is better educated, younger, and growing at a much faster rate than is typical for the state as a whole.
- WIA XII's population faces greater challenges with respect to English proficiency than is typical for the state as a whole.
- Projections indicate likely significant increases in employment in the Service sector.
- Employment increases in the Service sector – specifically, technology, health care, and education – will drive much of the demand for trained workers between 1998 and 2008.

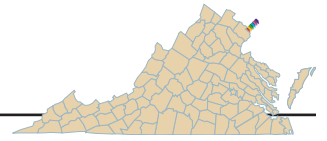


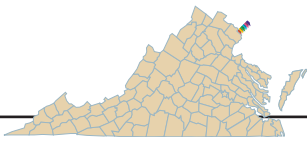


I. Introduction

This report provides a community profile of Workforce Investment Area XII (WIA XII). It was produced by the Virginia Employment Commission, with assistance from the Virginia Community College System and the Virginia Economic Development Partnership, at the request of the Special Advisor to the Governor for Workforce Development. It is intended to assist on-going strategic planning efforts within the Workforce Investment Boards by providing a solid, data-driven, foundation for strategic decision-making.

The report is divided into four major sections. The first contains a profile of regional demographic characteristics and trends, the second supplies similar information for the regional economy, and the third provides a profile of regional education characteristics and projected demands for training and skills. These are followed by a summary and conclusion section.

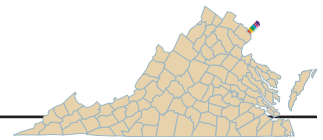




II. Demographic Profile

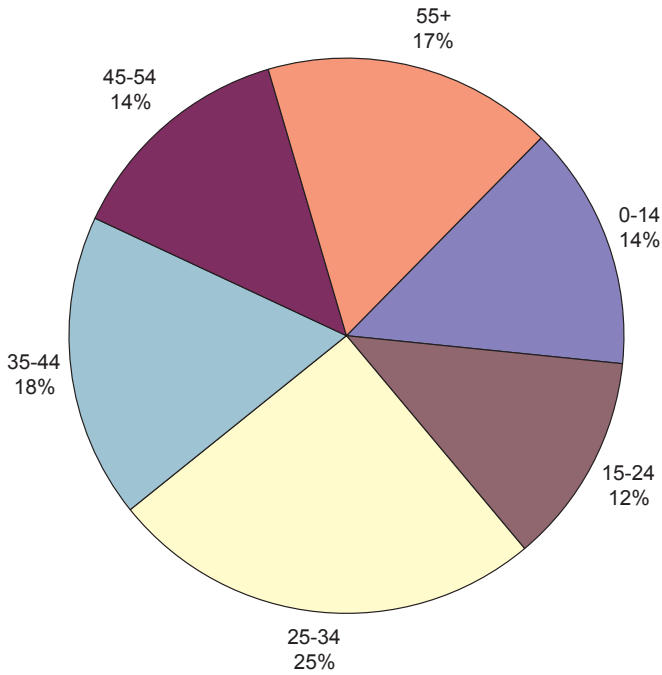
Population demographics are the single most important factor affecting WIA XII's future labor force. Some key features of the area's population are as follows:

- Tends to be slightly younger. Where statewide individuals who are 55 and older comprise 20 percent of the population, in WIA XII they comprise 17 percent of the population.
- Larger proportion of minorities. Where statewide minorities comprise 28 percent of the overall population, in WIA XII they comprise 35 percent of the population.
- Projected to increase by 35,564 persons (or 11.2 percent) between 2000 and 2010. The largest increase is expected in the city of Alexandria (20,017), followed by Arlington County (15,547).
- Larger proportion of individuals who "speak English less than well". Where statewide the proportion of individuals five and older who speak English less than well is 2.2 percent, in WIA XII it is 8.5 percent.
- Arlington County draws the largest number of in-commuters (129,267) of any locality in WIA XII. 10,755 of these in-commuters come from WIA XII, 72,473 come from Virginia localities outside WIA XII, and 46,039 come from out of state. The city of Alexandria draws 61,894 in-commuters, with 4,962 coming from within WIA XII, 39,654 from other Virginia localities, and 17,278 from out of state. On the whole, WIA XII is a net importer of workers with 175,444 individuals commuting into the area for work, while 123,667 of the area's residents commute to localities outside of WIA XII for work.

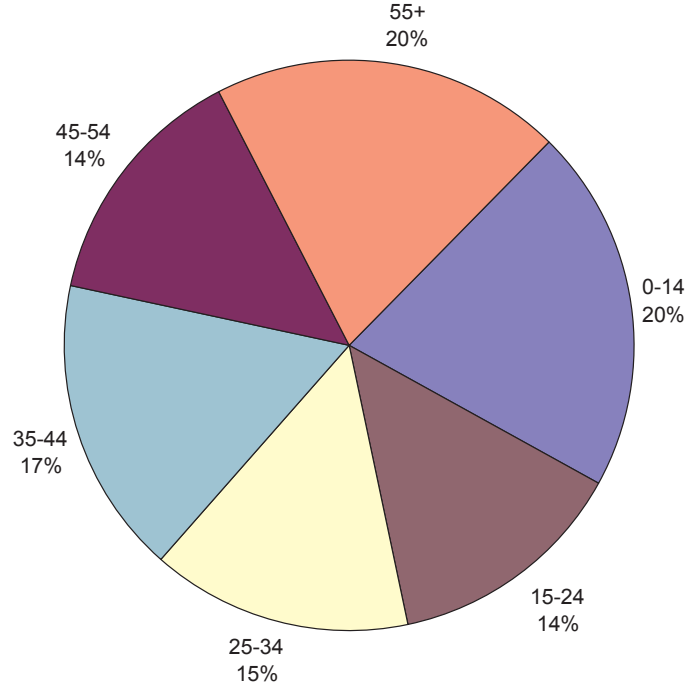


Population by Age Cohort

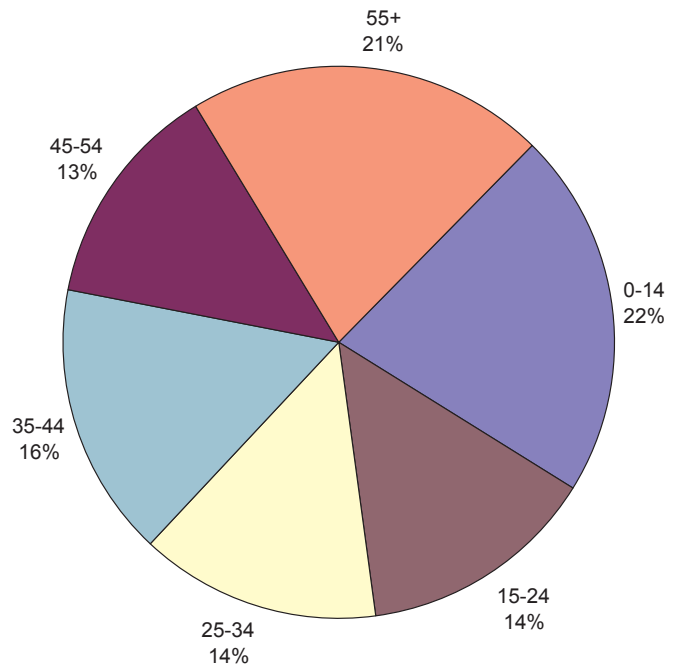
WIA XII



Virginia



United States



WIA XII

0-14	45,410
15-24	38,833
25-34	80,246
35-44	55,850
45-54	43,482
55+	53,915
Total	317,736

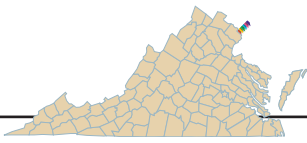
Virginia

0-14	1,453,452
15-24	963,469
25-34	1,036,911
35-44	1,200,950
45-54	999,548
55+	1,424,169
Total	7,078,494

United States

0-14	60,253,375
15-24	39,183,890
25-34	39,891,724
35-44	45,148,527
45-54	37,677,952
55+	59,266,437
Total	281,421,906

Subparts may not add to total due to rounding.
Source: 2000 Census.

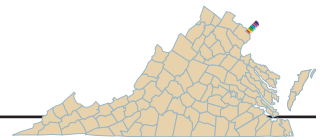


Population by Race/Ethnicity

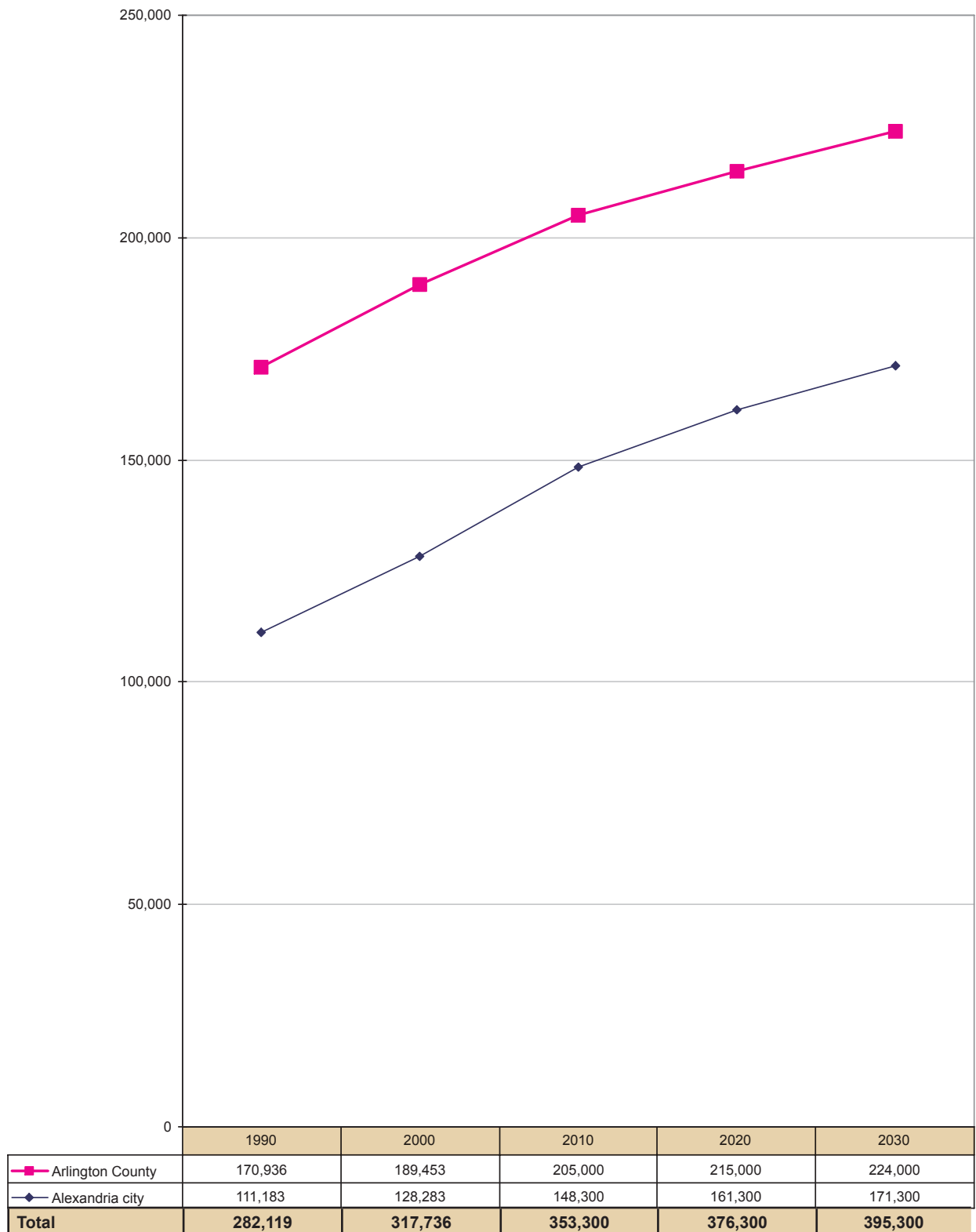
WIA XII		
Total Population	317,736	100.0%
Race		
White	207,303	65.2%
Black or African American	46,620	14.7%
American Indian and Alaska Native	1,017	0.3%
Asian	23,576	7.4%
Native Hawaiian and Other Pacific Islander	255	0.1%
Other and Multi-Race	38,965	12.3%
Ethnicity		
Hispanic or Latino (of any race)	54,150	17.0%

Virginia		
Total Population	7,078,515	100.0%
Race		
White	5,120,110	72.3%
Black or African American	1,390,293	19.6%
American Indian and Alaska Native	21,172	0.3%
Asian	261,025	3.7%
Native Hawaiian and Other Pacific Islander	3,946	0.1%
Other and Multi-Race	281,969	4.0%
Ethnicity		
Hispanic or Latino (of any race)	329,540	4.7%

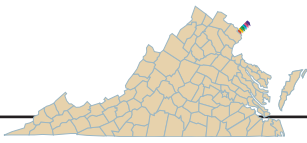
United States		
Total population	281,421,906	100.0%
Race		
One race	274,595,678	97.6%
White	211,460,626	75.1%
Black or African American	34,658,190	12.3%
American Indian and Alaska Native	2,475,956	0.9%
Asian	10,242,998	3.6%
Native Hawaiian and Other Pacific Islander	398,835	0.1%
Other and Multi-Race	22,185,301	7.9%
Ethnicity		
Hispanic or Latino (of any race)	35,305,818	12.5%



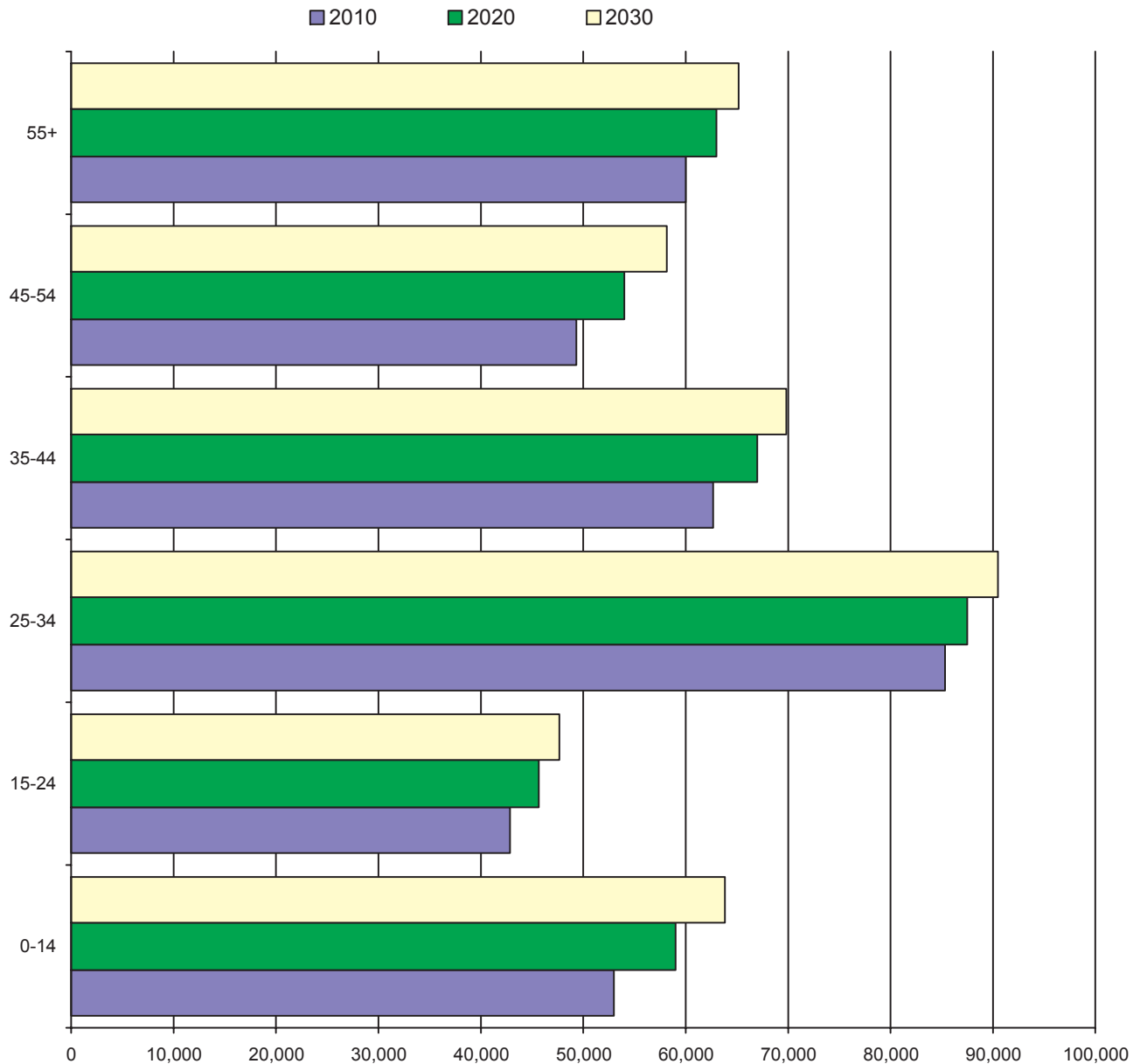
Population Change



Data for 2010 - 2030 are projections. Subparts may not add to total due to rounding.
Source: Virginia Employment Commission, 08/03, U.S. Census Bureau.



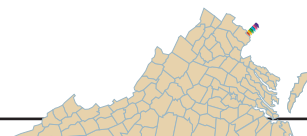
Population Projections by Age Cohort



	2010	2020	2030
0-14	53,081	58,943	63,813
15-24	42,843	45,732	47,701
25-34	85,363	87,573	90,539
35-44	62,717	66,988	69,848
45-54	49,285	54,006	58,205
55+	60,011	63,059	65,195
Total	353,300	376,300	395,300

Subparts may not add to total due to rounding.

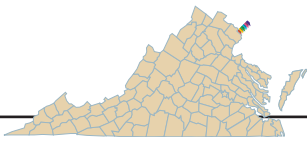
Source: Virginia Employment Commission.



English Language Skills

(Age 5 and over)

WIA XII		
	Total	Speak English less than well
Arlington County	179,064	16,185
Alexandria city	120,272	9,257
WIA XII	299,336	25,442
Virginia	6,619,266	143,865
<i>Percent of Individuals who speak English less than well</i>		
Virginia	2.17%	
WIA XII	8.50%	



Commuting Patterns¹

	In-Commute (To)							Total From County/ City:	Total In State	Total Out of State
	Arlington	Alexandria	Total From County/ City To WIA XII	Other VA Localities	Maryland	Washington D.C.	Other Out of State			
Out-Commute (From)	Arlington		4,962	27,490	6,952	42,263		81,667	32,452	49,215
	Alexandria		10,755	19,373	4,297	23,292		57,717	30,128	27,589
Total To County/City From WIA XII	10,755	4,962								
Other VA Localities	72,473	39,654								
Maryland	33,693	13,238								
Washington D.C.	12,164	4,040								
Other Out of State	182									
Total to County/ City:	129,267	61,894								
Total In State	83,228	44,616								
Total Out of State	46,039	17,278								

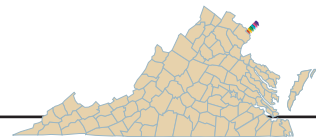
Total WIA Commuting ²	
Total Commuting To WIA:	175,444
Total Commuting From WIA:	123,667

Source: "In-Commuting Patterns" and "Out-Commuting Patterns," 2000 Census data, Virginia Employment Commission, http://www.vec.state.va.us/vecportal/lbrmkt/lmi_menu.cfm

1. Empty cells within the table indicate that the area's commuting represents less than .2% of total commuting or may be zero.
2. Total Commuting to/from WIA= Other VA Localities + Out of State

Example of how to use the Commuting Patterns table:

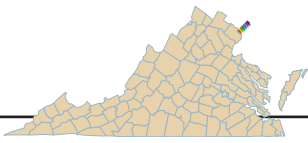
"How many of Alexandria's residents commute to Arlington County?" On the horizontal or To axis, locate the column labeled Arlington. On the vertical or From axis, locate the row labeled Alexandria. The intersection of the row and column, 10,755, is the number of Alexandria's residents that commute to Arlington County.



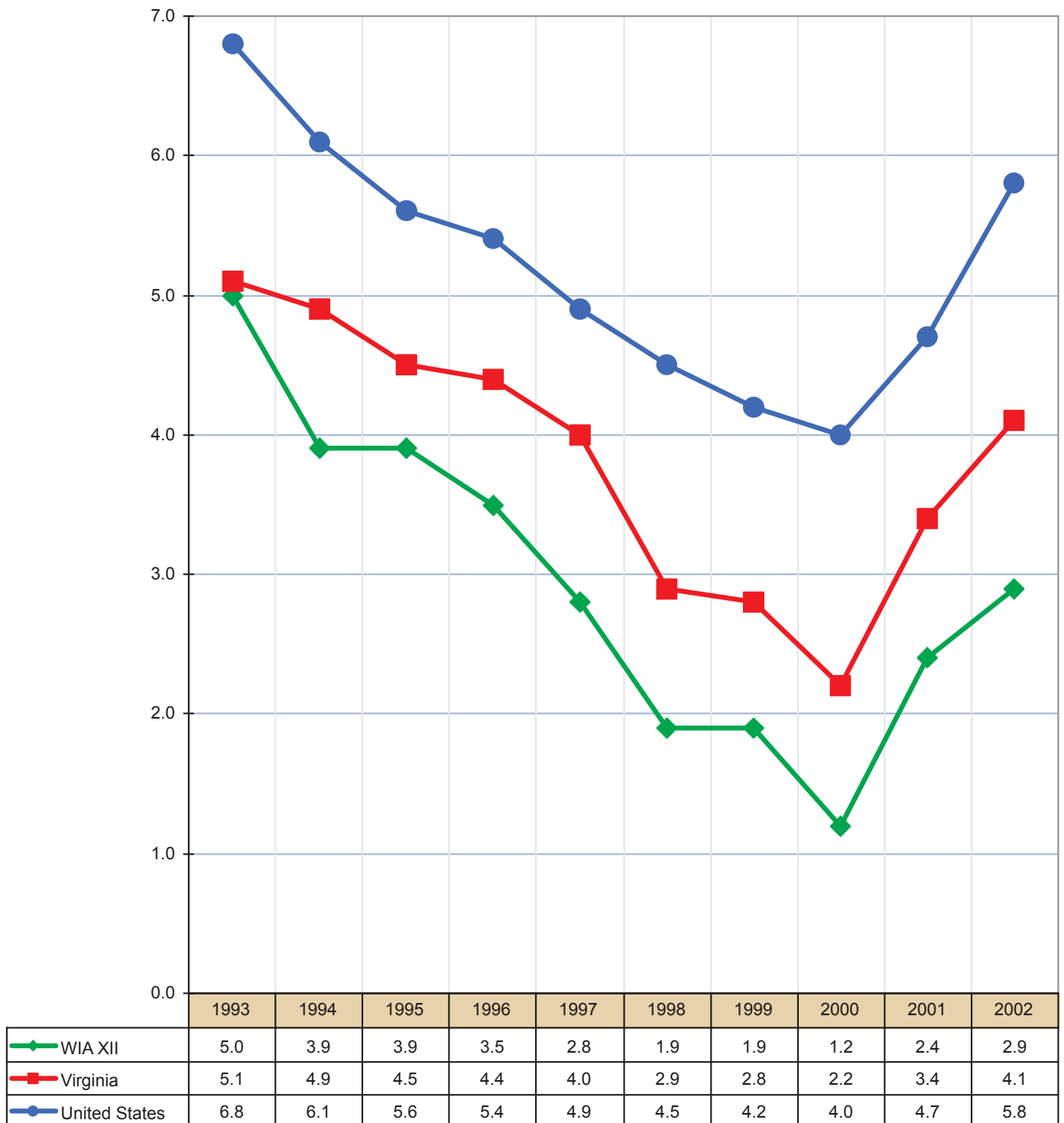
III. Economic Profile

Where population demographics provide information on underlying trends within the labor force, economic data provides more detailed information on the likely demand for specific types of workers. Some key features of WIA XII's economy are as follows:

- Unemployment rates are consistently below the statewide average, although the gap has narrowed in recent years. In 2002, WIA XII's unemployment rate was 2.9 percent, 1.2 percent below the statewide average of 4.1 percent.
- Employment is concentrated in Government (22.8 percent), Professional/Technical Services (17.6 percent), Accommodation/Food (8.5 percent), and Retail Trade (7.3 percent).
- Most recent new hires have been in Services (54.6 percent), Retail Trade (26.5 percent), and Construction (5.1 percent).
- Overall personnel turnover is slightly above the statewide average (13.6 percent vs. 13.2 percent). Personnel turnover tends to be highest in Mining (17.9 percent), followed by Retail Trade (16.8 percent), Construction (16.3 percent), and Transportation, Communication, and Utilities (13.6 percent).
- Weekly wages were highest in Utilities (\$1,672), followed by Management (\$1,667), Finance/Insurance (\$1,453), Information (\$1,452), Professional/Technical (\$1,419), and Federal Government (\$1,414).
- Industries with the largest proportion of workers at or near retirement age (55 and above) are Services (14.8 percent), Finance, Insurance, and Real Estate (13.6 percent), Manufacturing (12.7 percent), and Wholesale Trade (12.4 percent).
- Employment projections indicate that between 1998 and 2008, most employment growth will occur in Services (291,992 additional jobs), Retail Trade (45,690 additional jobs), and Transportation (15,531 additional jobs). In contrast, Federal Government is projected to lose 5,921 jobs.
- Employment projections also indicate that between 1998 and 2008, the biggest growth in occupational employment will be in Systems Analysts (21,270 openings), Computer Engineers (16,920 openings), Computer Support Specialists (15,260 openings), Home Health Aides (3,950 openings), and Database Administrators (3,350 openings). Alternatively, the biggest declines in occupational employment will be in Telephone Installers and Repairers, Directory Assistance Operators, and Peripheral EDP Equipment Operators.
- Based on January 2004 Unemployment data, the largest pools of available workers are in the Management, Office and Administrative Support, Construction and Extraction, and Sales occupations.



Unemployment Rate Trends



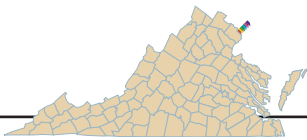


Employers by Size of Establishment

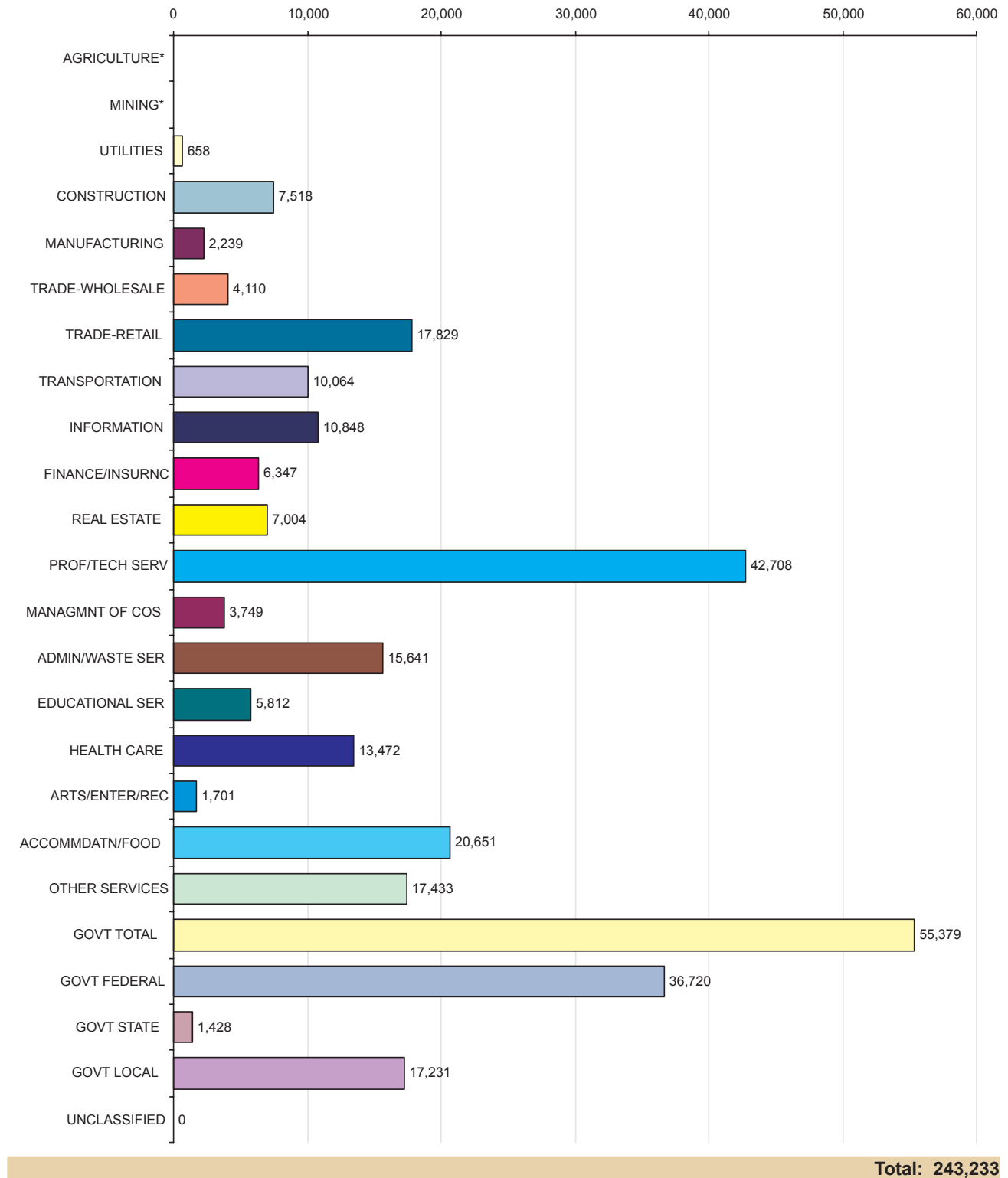
Number of Employees	WIA XII	Virginia
0 - 4	6,988	107,195
5 - 9	1,809	35,763
10 - 19	1,389	25,141
20 - 49	1,073	18,074
50 - 99	431	6,136
100 - 249	284	3,388
250 - 499	86	1,029
500 - 999	29	409
1000 +	12	229
TOTAL	12,101	197,364

Employment by Size of Establishment

Number of Employees	WIA XII	Virginia
0 - 4	10,979	188,377
5 - 9	12,121	238,634
10 - 19	19,157	340,363
20 - 49	32,914	553,221
50 - 99	29,676	422,392
100 - 249	44,007	503,348
250 - 499	30,137	352,727
500 - 999	19,308	274,493
1000 +	43,726	543,583
TOTAL	242,024	3,417,138

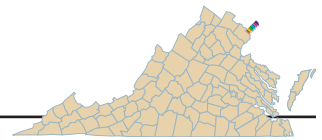


Employment by Industry



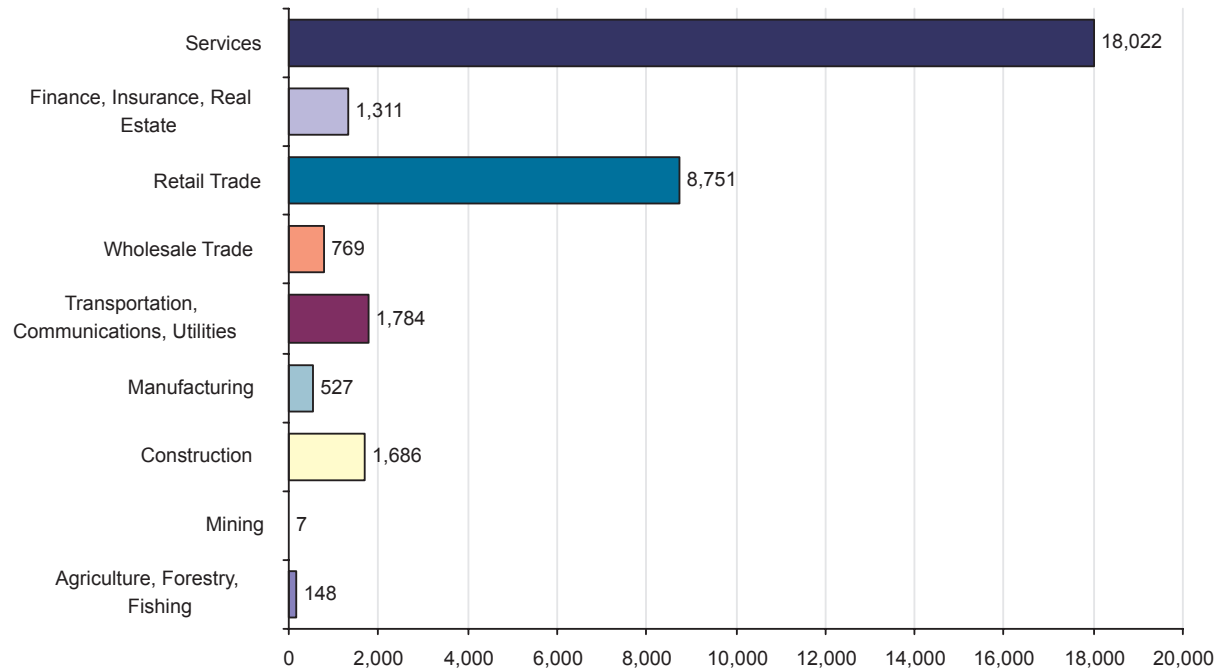
* Nondisclosed data

Source: Covered Employment and Wages, annualized 2002.



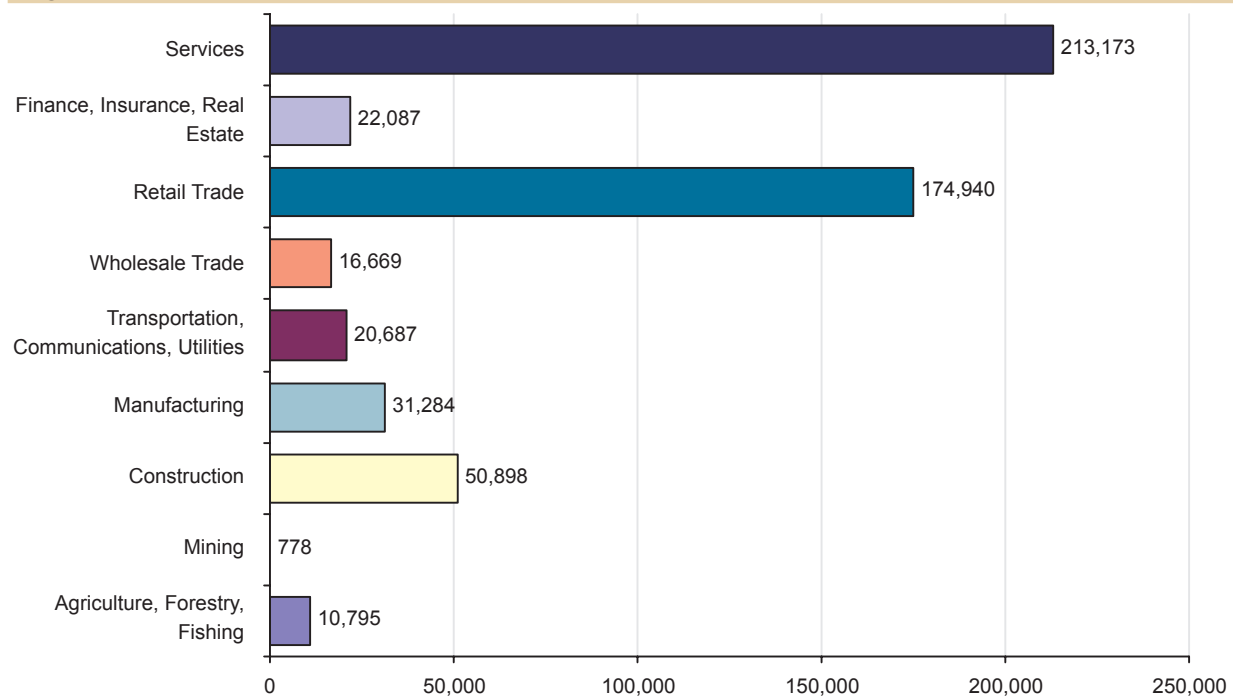
New Hires by Industry

WIA XII

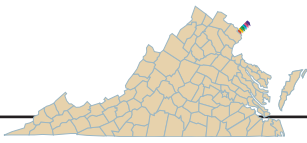


Total: 33,007

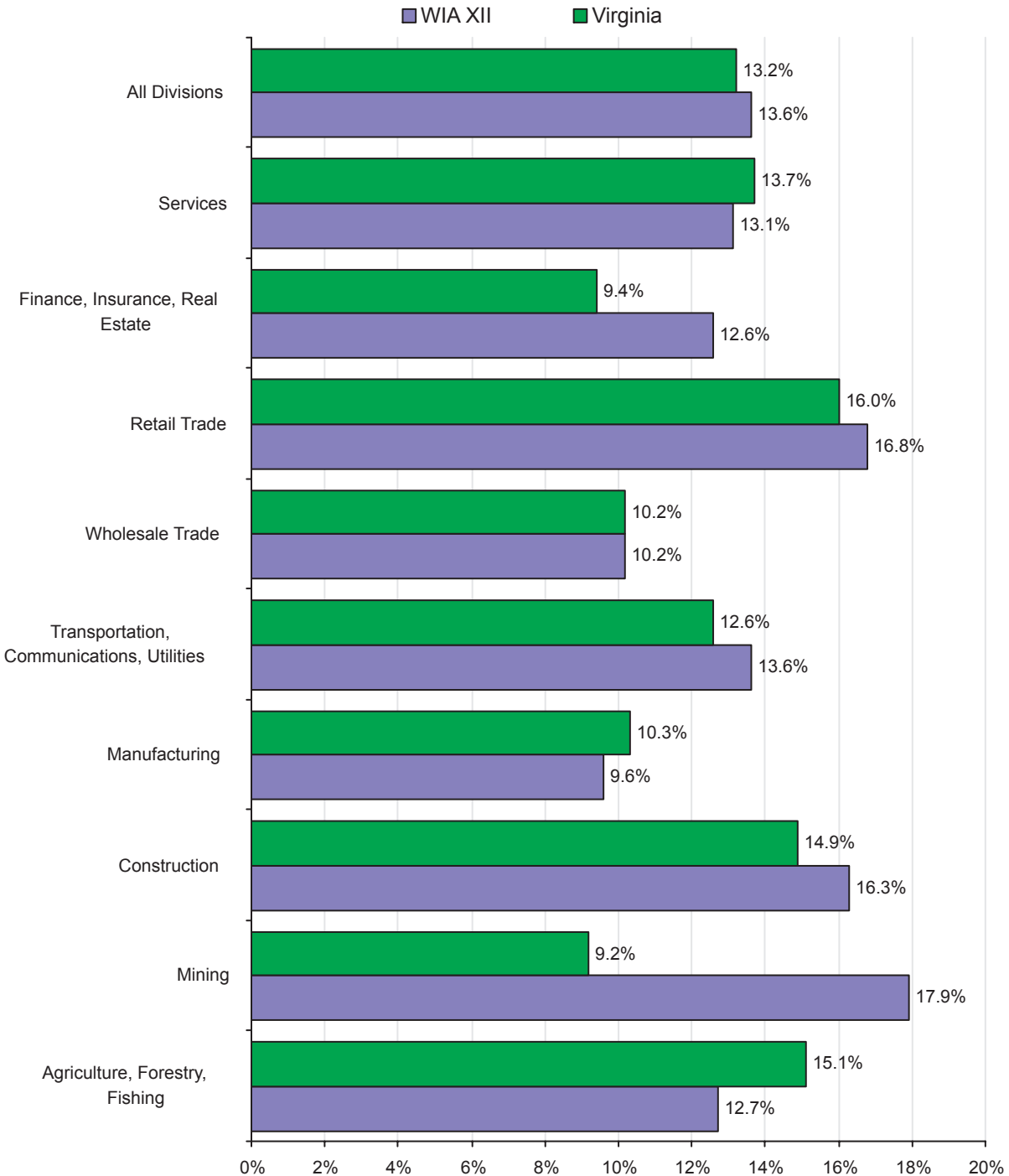
Virginia



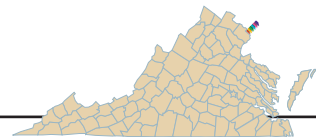
Total: 541,323



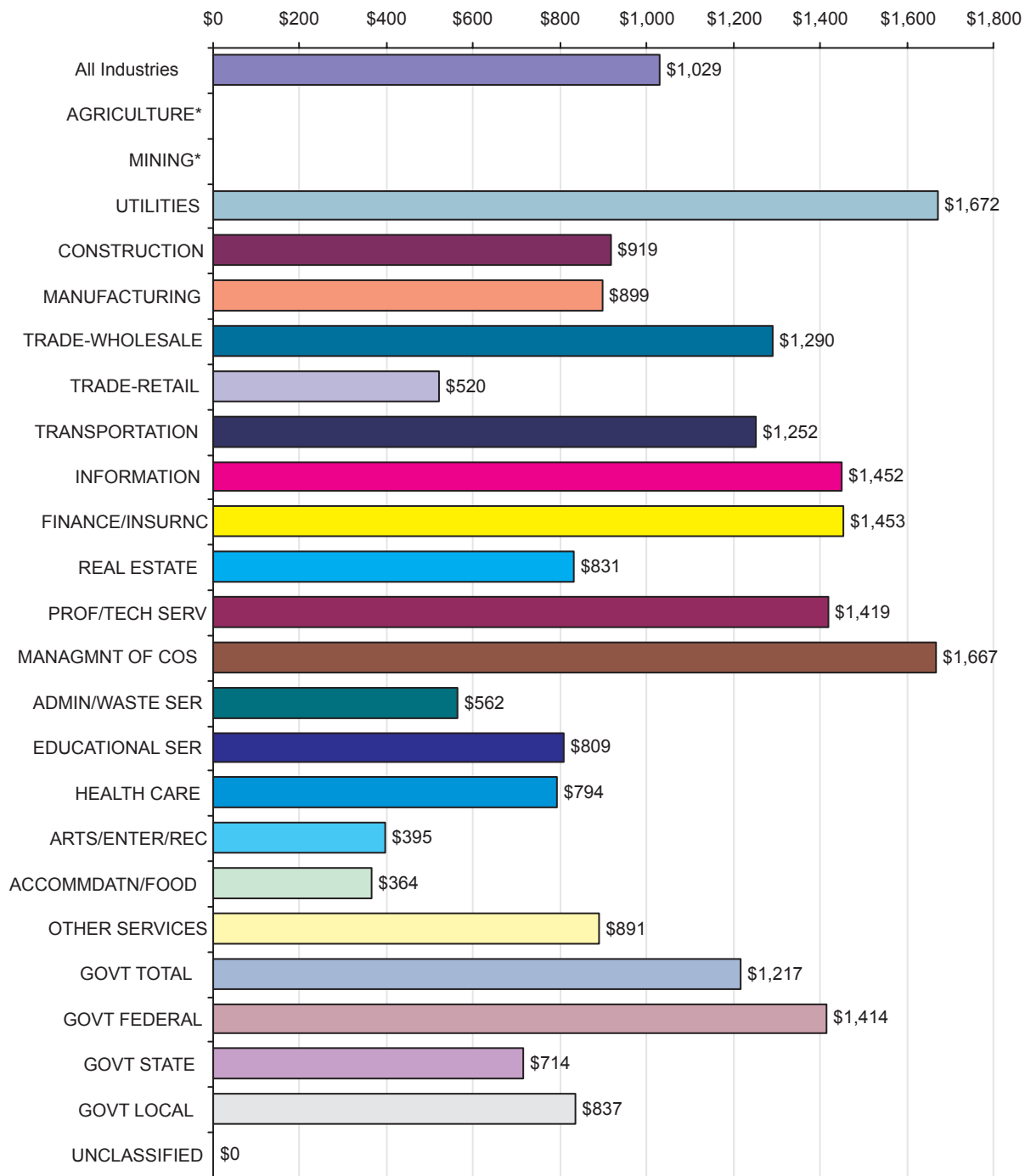
Turnover by Industry



Source: U.S. Census Bureau, Local Employment Dynamics (LED) Program, 2002 annual averages.

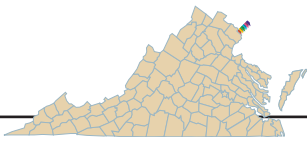


Average Weekly Wage by Industry



* Nondisclosed data

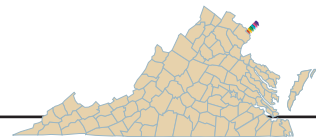
Source: Covered Employment and Wages, annualized 2002.



Age of Workers by Industry

■ WIA XII
 ■ Virginia

	14 - 18	19 - 21	22 - 24	25 - 34	35 - 44	45 - 54	55 - 64	65 - 99	14 - 99
Total Employment	3,599	7,404	11,897	52,356	52,203	39,399	20,078	5,572	192,507
	106,356	162,652	180,601	659,050	739,013	576,728	282,064	81,995	2,788,457
Agriculture, Forestry, and Fishing	23	50	75	230	152	97	43	12	680
	2,219	3,048	3,158	9,842	9,481	6,372	2,705	1,600	38,424
Mining	0	2	2	21	26	8	6	0	66
	22	221	366	1,702	2,803	3,498	1,129	136	9,876
Construction	93	289	425	1,960	2,221	1,551	610	227	7,375
	3,907	10,799	13,521	50,770	61,204	41,178	18,359	6,009	205,745
Manufacturing	29	73	195	1,321	1,464	1,053	484	118	4,736
	2,142	9,334	14,693	72,949	106,504	94,364	46,938	7,579	354,504
Transportation, Communications, and Utilities	55	312	676	4,513	5,973	4,668	1,964	194	18,355
	1,059	4,542	8,097	42,450	52,051	40,960	16,851	3,199	169,208
Wholesale Trade	38	135	292	1,454	1,776	1,242	547	149	5,631
	1,691	4,449	6,486	33,407	43,317	32,948	15,708	4,557	142,564
Retail Trade	2,189	3,568	3,131	8,808	7,190	4,845	2,299	1,053	33,083
	67,335	76,880	57,338	136,252	130,099	94,331	48,135	20,155	630,522
Finance, Insurance, and Real Estate	87	365	764	3,585	3,502	2,547	1,265	447	12,561
	1,775	7,281	13,158	53,760	56,683	42,503	20,070	5,079	200,308
Services	1,087	2,612	6,337	30,466	29,900	23,388	12,861	3,371	110,020
	26,206	46,097	63,782	257,918	276,866	220,571	112,170	33,682	1,037,291

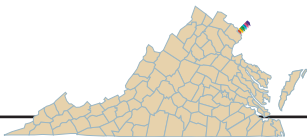


Total Employment by Industry

	Employment			Percent Change	
	Esti- mated 1998	Pro- jected 2008	Change	Total	Annual
Total All Industries	1,030,123	1,415,165	385,042	37.38%	3.23%
Agriculture, Forestry and Fishing, Total	14,759	16,598	1,839	12.46%	1.18%
Mining, Total	781	608	-173	-22.15%	-2.47%
Construction, Total	58,511	67,307	8,796	15.03%	1.41%
Manufacturing, Total	44,229	44,805	576	1.30%	0.13%
Durable Goods Manufacturing, Total	25,262	25,958	696	2.76%	0.27%
Nondurable Goods Manufacturing, Total	18,967	18,847	-120	-0.63%	-0.06%
Transportation and Public Utilities, Total	72,558	88,089	15,531	21.40%	1.96%
Transportation, Total	44,393	54,441	10,048	22.63%	2.06%
Communications and Utilities, Total	28,165	33,648	5,483	19.47%	1.79%
Wholesale and Retail Trade, Total	217,279	265,919	48,640	22.39%	2.04%
Wholesale Trade, Total	40,513	43,463	2,950	7.28%	0.71%
Retail Trade, Total	176,766	222,456	45,690	25.85%	2.33%
Finance, Insurance, and Real Estate, Total	57,878	72,641	14,763	25.51%	2.30%
Services, Total	455,738	747,730	291,992	64.07%	5.08%
Federal Government (Except Post Office)	65,473	59,552	-5,921	-9.04%	-0.94%
State Government (Except Education and Hospitality)	5,807	6,727	920	15.84%	1.48%
Local Government (Except Education and Hospitality)	37,110	45,189	8,079	21.77%	1.99%

Employment by Major Occupation Group

	Employment			Openings		
	Estimated 1998	Projected 2008	% Change	Replacements	Growth	Total
Total, All Occupations	1,030,099	1,415,152	37.38%	242,590	385,053	627,820
Executive, Administrative and Managerial Occupations	83,865	118,624	41.45%	14,750	34,759	49,510
Professional Specialty Occupations	276,413	437,987	58.45%	53,070	161,574	214,730
Marketing and Sales Occupations	125,761	163,795	30.24%	37,780	38,034	75,830
Administrative Support Occupations, Clerical	188,065	236,577	25.80%	38,770	48,512	87,310
Service Occupations	153,599	210,131	36.80%	48,730	56,532	105,270
Agriculture, Forestry, and Fishing Occupations	16,752	19,867	18.59%	4,570	3,115	7,680
Precision Production, Craft and Repair Occupations	87,894	105,203	19.69%	20,920	17,309	38,250
Operators, Fabricators, and Laborers	97,750	122,968	25.80%	24,000	25,218	49,240



Growth Occupations

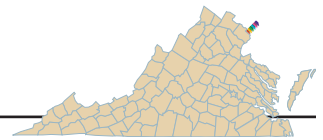
	Employment			Openings			Wages
	Estimated 1998	Projected 2008	% Change	Replacements	Growth	Total	Median Annual Wage
Computer Support Specialists	8,586	23,317	171.57%	530	14,731	15,260	\$43,728
Database Administrators	1,809	4,867	169.04%	290	3,058	3,350	\$52,332
Computer Engineers	9,992	26,288	163.09%	620	16,296	16,920	\$70,979
Systems Analysts	15,034	35,373	135.29%	930	20,339	21,270	\$70,352
Computer Science Teachers, Pstscndry	110	247	124.55%	30	137	170	\$44,490*
Home Health Aides	3,061	6,576	114.83%	430	3,515	3,950	\$20,161
Personal & Home Care Aides	884	1,898	114.71%	230	1,014	1,240	\$15,450
Instructors, Adult (Non-VocEd)	793	1,695	113.75%	80	902	980	\$36,433
Health Diagnostics Teachers, Pstscndry	270	549	103.33%	70	279	350	\$59,170*
Residential Counselors	892	1,797	101.46%	200	905	1,110	\$21,570
Occupational Therapy Assistants	136	269	97.79%	30	133	160	\$35,850*
Art, Drama & Music Teachers, Pstscndry	163	318	95.09%	50	155	210	\$43,453
Physical, Corrective Therapy Assistants	430	812	88.84%	110	382	490	\$42,255
Business Teachers, Pstscndry	246	459	86.59%	70	213	280	\$50,200*
Medical Assistants	1,594	2,924	83.44%	390	1,330	1,720	\$30,775
Physician Assistants	383	700	82.77%	60	317	380	\$58,531
Desktop Publishing Specialists	201	360	79.10%	30	159	190	\$33,810*
Speech Pathologist, Audiologists	576	1,031	78.99%	90	455	550	\$55,819
Child Care Workers	2,173	5,645	77.91%	310	2,472	2,780	\$17,325
Physical Therapists	626	1,113	77.80%	90	487	580	\$46,390

Declining Occupations

	Employment			Openings		
	Estimated 1998	Projected 2008	% Change	Replacements	Growth	Total
Typesetting & Composing Machine Oprs	97	40	-58.76%	20	-57	20
Railroad Brake, Signal & Switch Oprs	55	26	-52.73%	20	-29	20
Paste-up Workers	80	39	-51.25%	10	-41	10
Compositors & Typesetters, Precision	66	39	-40.91%	10	-27	10
Directory Assistance Operators	459	291	-36.60%	100	-168	100
Station Installers & Repairers, Telephone	547	352	-35.65%	180	-195	180
Film Strippers, Printing	168	112	-33.33%	30	-56	30
Peripheral EDP Equipment Operators	365	258	-29.32%	50	-107	50
Shipfitters	141	11	-21.28%	30	-30	30
Transportation Attendants	327	261	-20.18%	70	-66	70

Source: Industry and Occupational Projections, 1998 — 2008.

Projections data is for the Norfolk-Virginia Beach-Newport News MSA. Wages are for WIA XII.

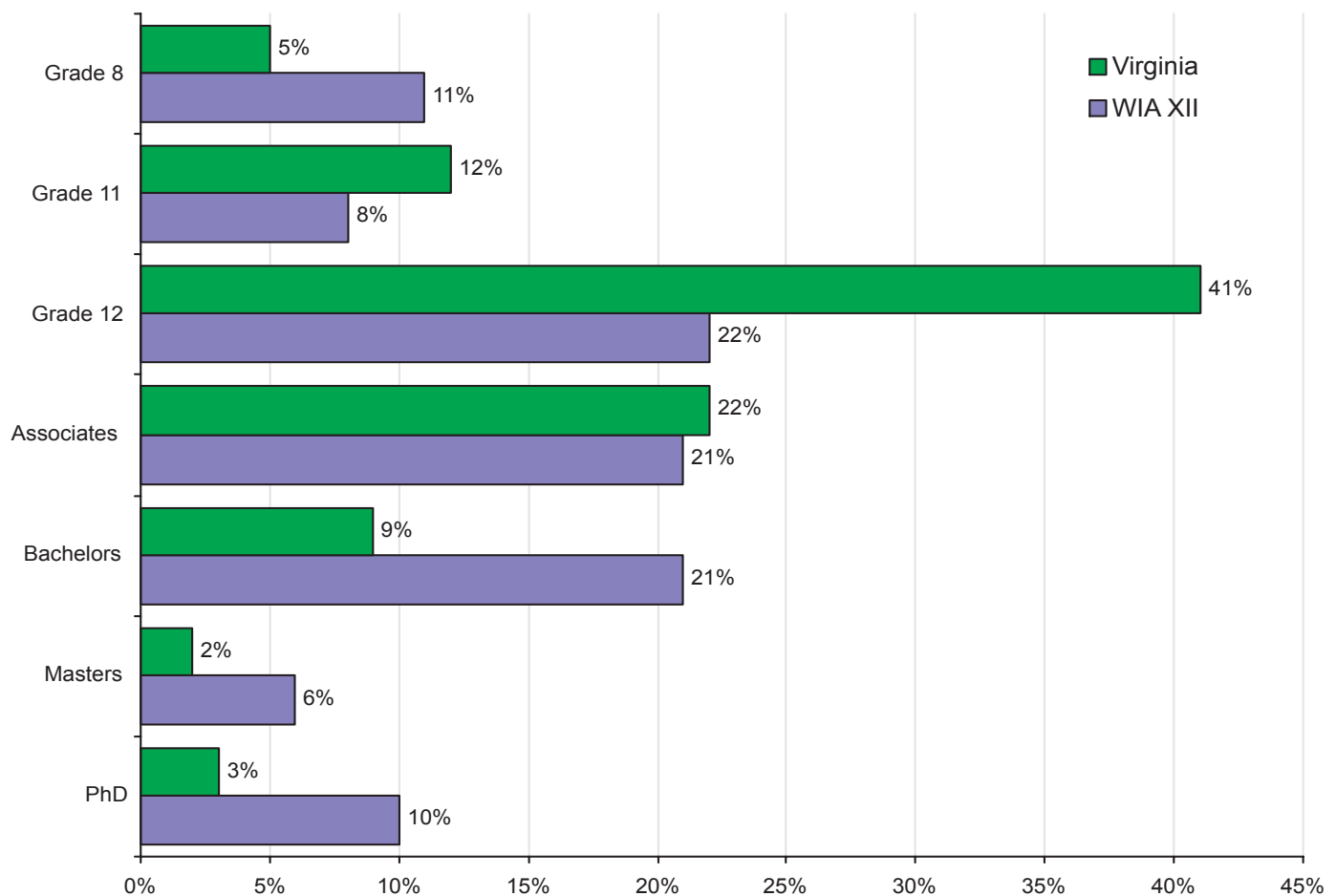


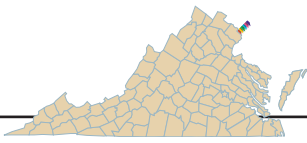
Characteristics of the Unemployed

Marketing the local labor force to new or expanding companies requires information about potential employees that would be available for immediate hire. Monthly data, collected as unemployed individuals apply for unemployment insurance benefits, provide information on various characteristics of the unemployed claimants. Demographic characteristics are recorded for age, race, sex, and education level. In addition, the industry of last employment and the occupation held in the most recent job is also part of the information collected when applicants register for unemployment insurance benefits.

As seen in the chart below, only 22% of the unemployed claimants in Alexandria/Arlington report a grade 12 education as the highest level attained, as compared to 41% of claimants statewide. However, for every level of education from Bachelors degree and higher, Alexandria/Arlington has a higher percentage of unemployed claimants than the state. Alexandria/Arlington has 1,577 unemployed claimants with at least a Bachelors degree, while many of the other regions of the state have a much smaller ratio of claimants with post-secondary education.

Unemployed Claimants by Education Level





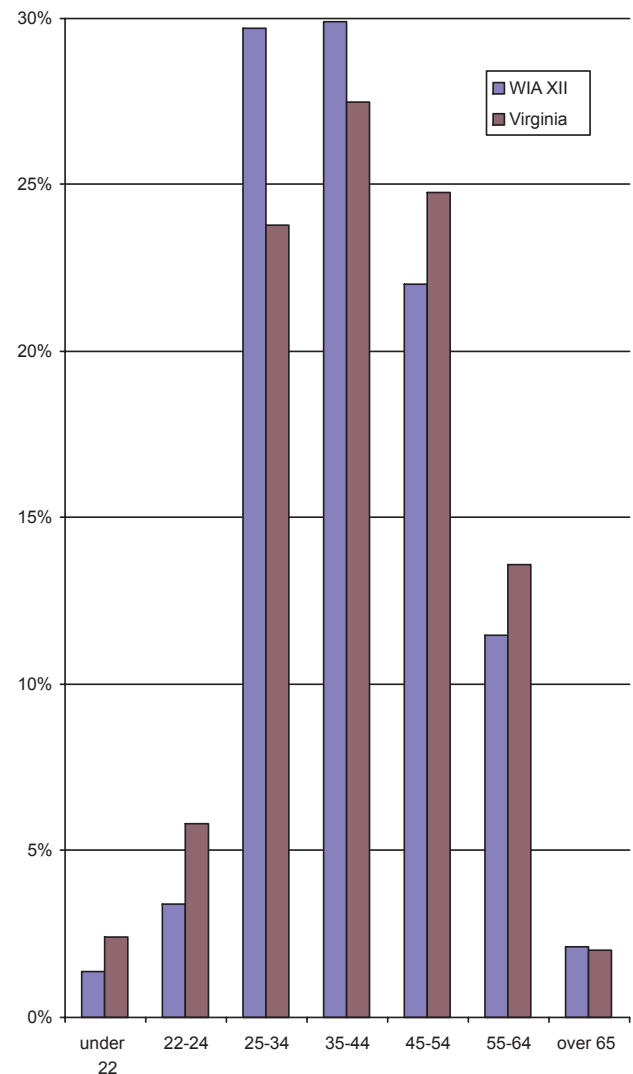
Characteristics of the Unemployed

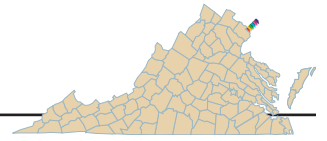
Management workers comprise the largest category of unemployed beneficiaries in Alexandria/Arlington, accounting for almost 16% of total claimants in February 2004. Office and Administrative Support and Construction and Extraction workers also account for a significant share of the unemployed claimants, collectively representing over 26% of the total. Employers requiring workers in these occupation categories will find an abundant supply.

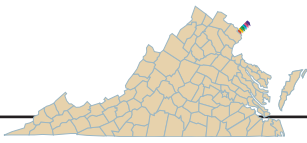
Claimants by Occupation

OCCUPATION	Number of Claimants
Management	644
Business and Financial Operations	239
Computer and Mathematical	291
Architecture and Engineering	68
Life, Physical, and Social Science	50
Community and Social Services	32
Legal	92
Education, Training, and Library	77
Arts, Design, Entertainment, Sports, and Media	116
Healthcare Practitioners and Technical	47
Healthcare Support	81
Protective Service	80
Food Preparation and Serving Related	140
Building and Grounds Cleaning and Maintenance	289
Personal Care and Service	60
Sales and Related	450
Office and Administrative Support	622
Farming, Fishing, and Forestry	2
Construction and Extraction	502
Installation, Maintenance, and Repair	75
Production	82
Transportation and Material Moving	197
Military Specific	5
SOC INA	
TOTAL	4,241

Claimants by Age







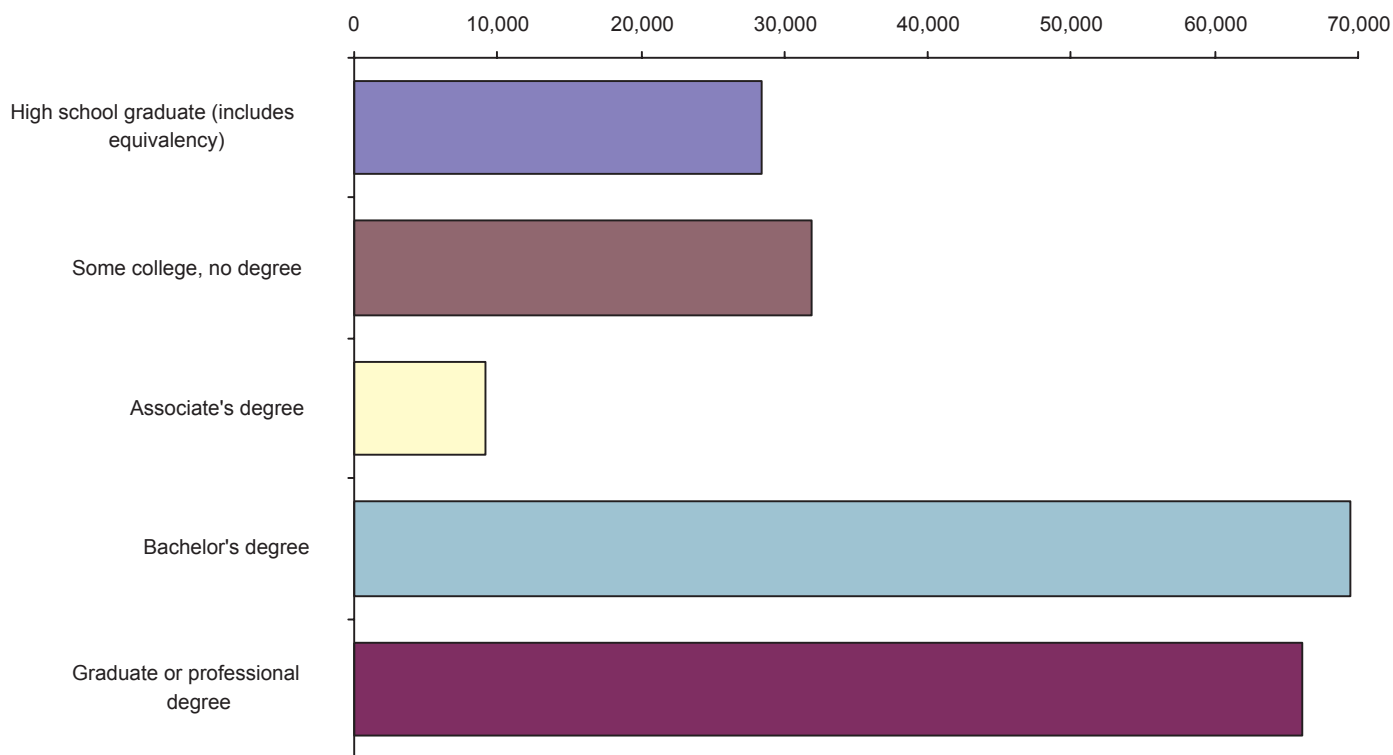
IV. Education Profile

Education data describe the human capital embodied in the current labor force and provide insight into the education and training that will be required to fill the ranks of the future labor force. Some key features of the WIA XII's education and training environment are as follows:

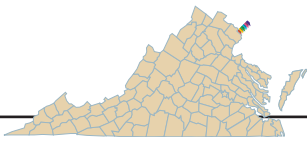
- Educational attainment at the baccalaureate level and above is high relative to the statewide average.
- An assessment of the occupation-driven demand for local training needs indicates that between 1998 and 2008 the greatest demand for graduates from:
 - *Post-secondary vocational programs* will be in Auto Mechanic/Technician, Computer Systems Installer and Repairer, Cosmetologist, Licensed Practical Nursing, and Travel Service Marketing Operations.
 - *Associate's degree programs* will be in Business Systems Networking and Telecommunications, Information Sciences and Systems, Management Information Systems and Business Data Processing, and Registered Nursing.
 - *Baccalaureate degree programs* will be in Accounting; Business Computer Programming; Child Care and Guidance Workers/Managers; Civil Engineering; Computer and Information Sciences; Computer Engineering; Computer Programming; Electrical, Electronics, and Computer Engineering; Elementary Teacher Education; General Education; General Finance; Human Resources Management; Information Sciences and Systems; Management Information Systems and Business Data Processing; Mechanical Engineering; Physical Education and Coaching; Public Relations and Organizational Communications; and Purchasing, Procurement, and Contracts Management.
 - *Post-Baccalaureate degree programs* will be in Law and Medicine
- An assessment of the occupation-driven demand for worker skills indicates that between 1998 and 2008 there will be a slight increase in required *reading for information* and *writing* skills.



Education Level



Population 25 years and over	234,574
High school graduate (includes equivalency)	28,389
Some college, no degree	31,880
Associate's degree	9,188
Bachelor's degree	69,459
Graduate or professional degree	66,136



Occupation-Driven Training Projection

In this section we use Virginia Employment Commission's (VEC's) occupational employment projections for the Northern Virginia Metropolitan Statistical Area (MSA),¹ in combination with a crosswalk developed by the National Crosswalk Service Center (NCSC) to "map" occupations into their prerequisite education and training programs.² Often these are many-to-many relationships where one occupation maps into several alternative education and training programs, and one program serves as a conduit into multiple occupations. The analysis is then further refined by using a classification scheme developed by the Bureau of Labor Statistics (BLS) to "sort" occupations according to the minimum degree or award typically required for employment in that occupation.³ Through this combination of steps, we are able to use VEC's occupational employment projections to predict the occupation-driven demand for specific education and training programs within the Northern Virginia MSA.⁴ The method used to accomplish this task is not new and has been successfully employed in earlier studies conducted in several states, including Virginia.⁵

The table that follows depicts the annual occupation-driven demand for training needs in the Northern Virginia MSA for the 1998 to 2008 period, as derived from this analysis. As these data show, the largest numbers of

needed graduates are in auto repair (e.g., Auto/Automotive Mechanic / Technician), business (e.g., Accounting; Business Administration and Management; General Finance; Human Resource Management; Public Relations, Purchasing, Procurement, and Contracts Management), clerical (e.g., Administrative Assistant/Secretarial Science), computer technology (Business Computer Programming/Programmer, Business System Networking and Telecommunications, Computer Programming, Computer and Information Sciences, Computer Systems Installer/Repairer, Information Sciences and Systems, Management Information Systems and Data Processing), education (e.g., Elementary Teacher Education, General Education, and Physical Education Teaching and Coaching), engineering (e.g., Computer Engineering, Civil Engineering, Electrical/Electronic and Communication Engineering, Engineering and Industrial Management, Mechanical Engineering), government (e.g., Public Administration), health (e.g., Medicine (MD), Registered Nurse, and Licensed Practical Nurse), law (e.g., Law (LLB, JD) and Paralegal/Legal Assistant), and services (Child Care and Guidance Workers and Managers, Cosmetologist, Dental Hygienist, Real Estate, Travel Services).

¹ The Northern Virginia Metropolitan Statistical Area is comprised of Arlington, Clarke, Culpeper, Fairfax, Fauquier, King George, Loudoun, Prince William, Spotsylvania, Stafford, and Warren counties, and the cities of Alexandria, Fairfax, Falls Church, Fredericksburg, Manassas City, and Manassas Park City.

² The National Crosswalk Service Center (NCSC) is funded by the U.S. Department of Labor, Employment and Training Administration. This crosswalk identifies the prerequisite instructional programs necessary for employment in 651 specific occupations.

³ The Bureau of Labor Statistics classifies occupations according to eleven education and training categories. Four of these involve on-the-job training or work experience only and the remaining seven require some level of postsecondary education (i.e., first-professional degree, doctoral degree, master's degree, bachelor's degree, associate's degree, or postsecondary vocational training). For purposes of this study, we restrict the analysis to occupations that fall within these seven education and training categories.

⁴ More formally, the demand for education and training programs is calculated as:

$$DCIP_i = \sum DCipji$$

Where,

$$DCipji = (SOC_j)(GCIP_i / \sum GCipij)$$

and,

$DCIP_i$ = the annual demand for instructional program i

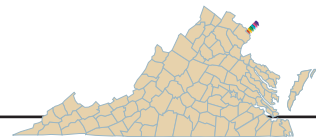
$\sum DCipji$ = the annual demand for instructional program i across all occupation(s) j

SOC_j = the projected annual openings for occupation j

$GCIP_i$ = Virginia graduates from instructional program i (for academic year 2000-01)

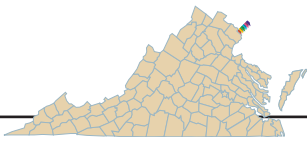
$\sum GCipij$ = Virginia graduates from all instructional program(s) i (for academic year 2000-01) related to occupation j

⁵ Similar methods are used in at least seven states (California, Georgia, Idaho, Illinois, New Jersey, Utah, and Virginia) to project anticipated education and training demands. For an excellent exposition of this method see, William J. Drummond and Jan L. Youtie, "Occupational Employment, Demand for College Graduates, and Migration: A Statewide View," a report to the Board of Regents, University System of Georgia, 1999. For an example of how this method has been used previously in Virginia see, A. Fletcher Mangum, "System-Wide Needs Assessment for Virginia Education," State Council of Higher Education for Virginia, March 28, 2002, p.90.



**Table 1: Annual Occupation-Driven Training Needs
in the Northern Virginia MSA, 1998 – 2008**

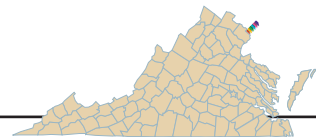
Program	Associate's Degree	Bachelor's Degree	Work Experience plus degree	First Professional	Master's Degree	Doctoral Degree	Postsecondary Vocational Training	Total
Accounting					544			544
Actuarial Science					4			4
Adaptive Physical Education/ Therapeutic Recreation					2			2
Administrative Assistant / Secretarial Science, General							88	88
Adult and Continuing Education Administration				1				1
Advertising				8				8
Aeronautical and Aerospace Engineering Tech/Technician						5		5
Aerospace, Aeronautical and Astronautical Engineering					27			27
Agricultural Animal Husbandry and Production Management				1	2			3
Agricultural Business and Management, General				2				2
Agricultural Business/ Agribusiness Operations				1				1
Agricultural Economics					2			2
Agricultural Engineering					1			1
Agricultural Supplies Retailing and Wholesaling					1			1
Agricultural Teacher Education (Vocational)					8			8
Agriculture / Agricultural Sciences, General					1			1
Animal Sciences, General				3	2			5
Applied and Resource Economics					1			1
Applied Mathematics, General			14					14
Architectural Engineering					10			10
Architectural Environmental Design					14			14
Architectural Urban Design and Planning			3					3
Architecture					85			85
Art History, Criticism and Conservation			4					4
Art Teacher Education					31			31
Art, General				29				29
Arts Management				5				5
Atmospheric Sciences and Meteorology					4			4
Audiology/Hearing Sciences			3					3
Auto / Automotive Mechanic / Technician							239	239
Automotive Engineering Tech / Technician							13	13
Aviation Systems and Avionics Main. Technologist/ Technician							1	1



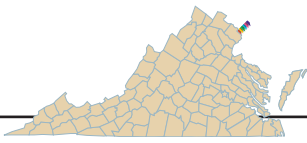
Program	Associate's Degree	Bachelor's Degree	Work Experience plus degree	First Professional	Master's Degree	Doctoral Degree	Postsecondary Vocational Training	Total
Barber/Hairstylist							13	13
Basic Medical Sciences, Other		1						1
Bible/Biblical Studies					9			9
Bilingual/Bicultural Education					22			22
Biochemistry		3						3
Biology Teacher Education					4			4
Biology, General		38						38
Business Administration and Management, General				2,803	12			2,815
Business Computer Programming / Programmer					134			134
Business Information and Data Processing Services, Other					11			11
Business Machine Repairer							2	2
Business Marketing and Marketing Management				53				53
Business Quantitative Methods and Management Science, Other			16					16
Business Services Marketing Operations					5			5
Business Systems Analysis and Design					54			54
Business Systems Networking and Telecommunications					22	361		383
Business Teacher Education (Vocational)					8			8
Business / Managerial Economics					6			6
Cardiovascular Tech / Technician						13		13
Cartography					8			8
Cell and Molecular Biology, Other		2						2
Ceramic Sciences and Engineering					1			1
Ceramics Arts and Ceramics				1				1
Chemical Engineering					24			24
Chemistry Teacher Education					1			1
Chemistry, General					22			22
Chemistry, Other					1			1
Child Care and Guidance Workers and Managers, General					186			186
Child Care Provider / Assistant					59			59
Child Care Services Manager					17			17
Chiropractic (DC, DCM)	8							8
City/Urban, Community and Regional Planning			46					46
Civil Engineering, General					194			194
Civil Engineering, other					3			3
Clinical Psychology			2					2

Education Profile

WIA XII



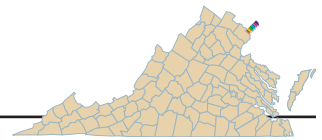
Program	Associate's Degree	Bachelor's Degree	Work Experience plus degree	First Professional	Master's Degree	Doctoral Degree	Postsecondary Vocational Training	Total
Clothing, Apparel and Textile Workers and Managers, General					1			1
College/Postsecondary Student Counseling and Personnel			3					3
Commercial Photography							2	2
Communication Disorders, General			14					14
Communication Systems Installer and Repairer							102	102
Communications Technol. / Technicians, Other							4	4
Community Organization, Resources and Services				5				5
Computer and Information Sciences, General					1,342			1,342
Computer and Information Sciences, Other					43			43
Computer Engineering					451			451
Computer Engineering Tech / Technician						57		57
Computer Installer and Repairer							22	22
Computer Maintenance Tech/Technician							58	58
Computer Programming					310			310
Computer Science					14			14
Computer System Analysis					67			67
Computer Teacher Education					11			11
Cosmetic Services, General							10	10
Cosmetologist							156	156
Counseling Psychology			2					2
Counselor Education Counseling and Guidance Services			77					77
Court Reporter							4	4
Crafts, Folk Art and Artisanry				1				1
Dance							4	4
Data Processing Tech / Technician					15			15
Dental Clinical Services / Graduate Dentistry (MS, PhD)	4							4
Dental Hygienist						93		93
Dentistry (DDS, DMD)	37							37
Design and Applied Arts, Other					17			17
Design and Visual Communications					47			47
Dietetics / Human Nutritional Services					4			4
Divinity/Ministry (B.D., M.Div.)	4							4
Drama and Dance Teacher Education					2			2
Drawing				1				1
Earth and Planetary Sciences					7			7
Ecology		1						1



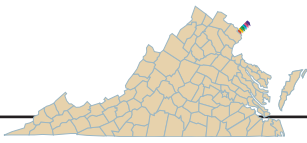
Program	Associate's Degree	Bachelor's Degree	Work Experience plus degree	First Professional	Master's Degree	Doctoral Degree	Postsecondary Vocational Training	Total
Economics, General					39			39
Economics, Other					1			1
Education Administration and Supervision, General				56				56
Education Administration and Supervision, Other				4				4
Education of the Deaf and Hearing Impaired					2			2
Education of the Emotionally Handicapped					1			1
Education of the Mentally Handicapped					1			1
Education of the Multiple Handicapped					1			1
Education of the Specific Learning Disabled					3			3
Education of the Speech Impaired					3			3
Education, General				111	676			787
Educational Supervision				3				3
Electrical and Electronic Engineering – Related Tech / Technician						66		66
Electrical and Electronics Equipment Installer and Repairer							17	17
Electrical, Electronic and Communications Engineering Tech / Technician						95		95
Electrical, Electronics and Communication Engineering					401			401
Electromechanical Tech / Technician						13		13
Elementary Teacher Education					327			327
Elementary, Middle and Secondary Education Administration				11				11
Emergency Medical Tech / Technician							33	33
Engineering / Industrial Management				501	7			508
English Teacher Education					45			45
Enterprise Management and Operation, General				24				24
Environmental Health		1						1
Epidemiology		1						1
Farm and Ranch Management				2				2
Fashion and Fabric Consultant					2			2
Fashion Design and Illustration					21			21
Fashion Merchandising				4				4
Film/Video and Photographic Arts, Other							2	2
Finance, General				308	284			592
Financial Management and Services, Other				6				6
Financial Planning					16			16
Financial Services Marketing Operations					6			6
Fine Arts and Art Studies, Other				5				5

Education Profile

WIA XII



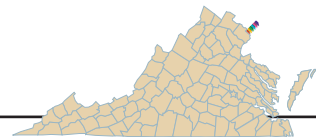
Program	Associate's Degree	Bachelor's Degree	Work Experience plus degree	First Professional	Master's Degree	Doctoral Degree	Postsecondary Vocational Training	Total
Fine/Studio Arts				13				13
Floristry Marketing Operations					8			8
Food Sciences and Tech					1			1
Food and Nutrition Science					2			2
Foods and Nutrition Studies, General					6			6
Foreign Languages Teacher Education					6			6
Forestry, General					1			1
French Language Teacher Education					1			1
Funeral Services and Mortuary Science						4		4
General Buying Operations					21			21
General Retailing Operations					21			21
Genetics, Plant and Animal		1						1
Geological and Related Sciences, Other					7			7
Geology					36			36
Geophysics and Seismology					2			2
Graphic Design, Commercial Art and Illustration				37				37
Health and Medical Administrative Services, Other				2				2
Health and Physical Education, General					15			15
Health and Physical Education/Fitness, Other					2			2
Health Occupations Teacher Education (Vocational)					1			1
Health System/Health Services Administration				2				2
Health Teacher Education					21			21
Higher Education Administration				3				3
History Teacher Education					5			5
Home Economics Teacher Education (Vocational)					3			3
Home Furnishings and Equipment Installers and Consultants, General					2			2
Hospital/Health Facilities Administration				1				1
Human Resources Management				68	220			288
Human Resources Management, Other					24			24
Industrial and Organizational Psychology			1					1
Industrial Design					11			11
Industrial Electronics Installer and Repairer							4	4
Industrial/Manufacturing Engineering					26			26
Information Sciences and Systems					1,327	453		1,780
Instrumentation Tech / Technician						5		5
Insurance and Risk Management					22			22
Insurance Marketing Operations					80			80



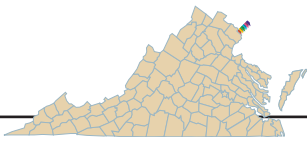
Program	Associate's Degree	Bachelor's Degree	Work Experience plus degree	First Professional	Master's Degree	Doctoral Degree	Postsecondary Vocational Training	Total
Interior Architecture					6			6
Interior Design					16			16
Interior Environments					1			1
Intermedia				1				1
International Business				70				70
International Finance				1				1
Investments and Securities				9	48			57
Junior High / Intermediate / Middle School Teacher Education					18			18
Juridical Science / Legal Specialization (LLM, MCL, JSD)	10							10
Labor/Personnel Relations and Studies				14	30			44
Landscape Architecture					6			6
Law (LLB, JD)	158							158
Law and Legal Studies, Other	12							12
Legal Administrative Assistant / Secretary							5	5
Library Science, Other			3					3
Library Science / Librarianship			62					62
Logistics and Materials Management				4				4
Make-Up Artist							9	9
Management Information Systems and Business Data Processing					625	712		1,337
Management Science			50					50
Marine/Aquatic Biology		1						1
Marketing Management and Research, Other				2				2
Marketing Operations Teacher Ed./Mkt. & Distribution Teacher					1			1
Material Engineering					5			5
Materials Science					1			1
Mathematical Statistics			1					1
Mathematics			11					11
Mathematics Teacher Education					31			31
Mechanical Engineering					140			140
Medical Administrative Assistant / Secretary							15	15
Medical Immunology	1							1
Medical Office Management							6	6
Medical Pharmacology and Pharmaceutical Sciences	4	1						5
Medical Records Administration				1				1
Medical Records Tech / Technician						32		32
Medical Transcription							30	30

Education Profile

WIA XII



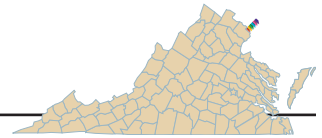
Program	Associate's Degree	Bachelor's Degree	Work Experience plus degree	First Professional	Master's Degree	Doctoral Degree	Postsecondary Vocational Training	Total
Medicine (MD)	190							190
Metal and Jewelry Arts				7				7
Metallurgical Engineering					1			1
Microbiology/ Bacteriology		3						3
Miscellaneous Biological Specializations, Other		1						1
Missions/Missionary Studies and Misology					2			2
Molecular Biology		1						1
Music Teacher Education					57			57
Natural Resources Conservation, General					2			2
Natural Resources Management and Policy					1			1
Natural Resources Management and Protective Services, Other					1			1
Neuroscience		1						1
Nuclear Engineering					8			8
Nuclear Medical Tech / Technician						2		2
Nursing (R.N. Training)						490		490
Nursing Anesthetics (Post-R.N.)						4		4
Nursing Midwifery (Post-RN)						1		1
Nursing Science (Post-R.N.)						23		23
Nursing, Adult Health (Post-R.N.)						2		2
Nursing, Family Practice (Post-R.N.)						7		7
Nursing, Maternal/Child Health (Post-R.N.)						1		1
Nursing, Other						72		72
Nursing, Psychiatric/Mental Health (Post-RN)						1		1
Nursing, Public Health (Post-R.N.)						1		1
Nursing, Surgical (Post-R.N.)						1		1
Nutritional Sciences		1						1
Occupational Therapy					32			32
Occupational Therapy Assistant						16		16
Oceanography					10			10
Operations Research			7					7
Optometry (O.D.)	10							10
Organizational Behavior Studies					57			57
Osteopathic Medicine (D.O.)	30							30
Painting				2				2
Paralegal/Legal Assistant						95		95
Parks, Recreation and Leisure Facilities Management					7			7
Parks, Recreation and Leisure Studies					7			7



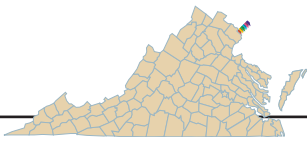
Program	Associate's Degree	Bachelor's Degree	Work Experience plus degree	First Professional	Master's Degree	Doctoral Degree	Postsecondary Vocational Training	Total
Parks, Recreation, Leisure and Fitness Studies, other					1			1
Pastoral Counseling and Specialized Ministries	1				2			3
Pharmacology, Human and Animal		1						1
Pharmacy (B. Pharm., Pharm D.)	48							48
Pharmacy Administration and Pharmaceutics	1							1
Pharmacy, other	3							3
Photography							5	5
Physical Education Teaching and Coaching					122			122
Physical Therapy			58					58
Physical Therapy Assistant						49		49
Physician Assistant					38			38
Physics, General		9						9
Physiology, Human and Animal		1						1
Podiatry (DPM, DP, Pod.D)	2							2
Practical Nurse (LPN Training)							296	296
Psychiatric / Mental Health Services Technician							21	21
Psychology, General			31					31
Psychology, Other			2					2
Public Administration				173				173
Public Administration and Services, Other				5				5
Public Health, General				1				1
Public Policy Analysis				2				2
Public Relations and Organizational Communications				6	110			116
Purchasing, Procurement and Contracts Management				2	181			183
Radio and Television Broadcasting Tech / Technician							4	4
Reading Teacher Education					72			72
Real Estate					73		35	108
Recreational Therapy					4			4
Religious Education					4			4
Respiratory Therapy Technician						22		22
Robotics Tech / Technician						4		4
School Psychology			8					8
Science Teacher Education, General					16			16
Sculpture				1				1
Secondary Teacher Education					78			78
Social Science Teacher Education					7			7

Education Profile

WIA XII



Program	Associate's Degree	Bachelor's Degree	Work Experience plus degree	First Professional	Master's Degree	Doctoral Degree	Postsecondary Vocational Training	Total
Social Studies Teacher Education					20			20
Spanish Language Teacher Education					6			6
Special Education, General					55			55
Special Education, Other					4			4
Speech Teacher Education					1			1
Speech-Language Pathology			10					10
Speech-Language Pathology and Audiology			28					28
Sport and Fitness Administration/Management					7			7
Structural Engineering					1			1
Surgical / Operating Room Technician							14	14
Surveying					27			27
Systems Engineering					1			1
Taxation					31			31
Teacher Education, Specific Academic and Vocational Programs					35			35
Technical Teacher Education (Vocational)					9			9
Technical Theater/Theater Design and Stagecraft				1	3			4
Technology Teacher Education / Industrial Arts Teacher Ed					12			12
Theological and Ministerial Studies, Other					3			3
Theological Studies and Religious Vocations, Other	1							1
Theology/Theological Studies	4							4
Trade and Industrial Teacher Education (Vocational)					13			13
Transportation and Highway Engineering					1			1
Travel Services Marketing Operations							100	100
Veterinarian Assistant / Animal Health Technician						14		14
Veterinary Clinical Sciences (MS, PhD)	2							2
Veterinary Medicine (DVM)	21							21
Vocational Rehabilitation Counseling			4					4
Water Resources Engineering					1			1
Zoology, General		2						2
Totals	551	70	460	4,377	9,631	2,714	1,314	19,117



Work Skills Projection

In this section we use the VEC's occupational employment projections for the Washington, D.C. MSA, in combination with occupational skills profiles developed by ACT, to identify the skill sets that will be required to fill projected annual job openings within the region. The skills categories addressed in this analysis are Applied Mathematics, Applied Technology, Listening, Locating Information, Observation, Reading for Information, Teamwork, and Writing. A description of each category, the skills levels associated with it, and the proportion of projected annual job openings that fall within each skill level follow.

Applied Mathematics

The *Applied Mathematics* assessment measures a person's skill in using mathematical reasoning to solve work-related problems. ACT defines the skills levels associated with this category as follows.

Level 3:

- Perform basic mathematical operations using whole numbers and decimals.
- Convert a number from one form into another using whole numbers, fractions, decimals, or percentages.
- Solve problems that are straightforward, involving a single type of mathematical operation.
- Translate easily from a verbal setup to a mathematical equation when all the information needed to solve the problem is provided in logical order and no unrelated information is included.

Level 4 (in addition to requirements for previous levels):

- Perform one or two mathematical operations using several positive or negative numbers.
- Add commonly known fractions, decimals, or percentages, or add three fractions that share a common denominator.
- Calculate averages, simple ratios, proportions, and rates, using whole numbers and decimals.

- Reorder verbal information before performing calculations.
- Determine which operations to perform and in what order.
- Read a simple chart or graph to obtain the information needed to solve a problem.

Level 5 (in addition to requirements for previous levels):

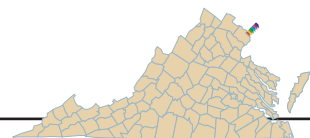
- Look up and calculate single-step conversions within English or non-English systems of measurement or between systems of measurement.
- Calculate using mixed units and several steps of logic.
- Calculate perimeters and areas of basic shapes.
- Calculate percentage discounts and markups.
- Determine what information, calculations, and unit conversions are needed to find a solution.

Level 6 (in addition to requirements for previous levels):

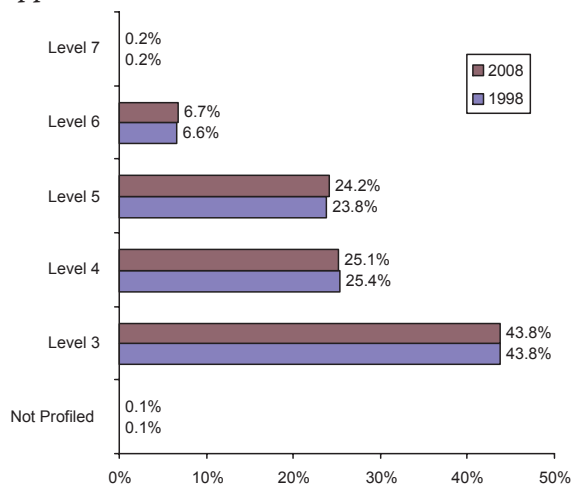
- Calculate using negative numbers, fractions, ratios, percentages, and mixed numbers.
- Calculate multiple rates for comparison or use in other calculations.
- Find basic areas and volumes of rectangular solids.
- Identify and correct errors in calculations.
- Solve problems involving considerable setup and multiple-step calculations or conversions.

Level 7 (in addition to requirements for previous levels):

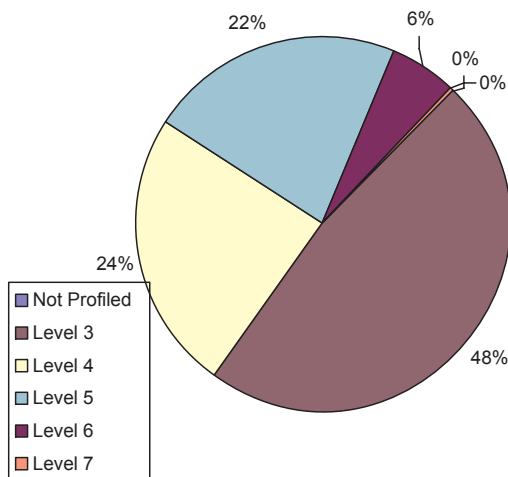
- Calculate using multiple steps of logic.
- Calculate multiple areas and the volumes of spheres, cylinders, and cones.
- Solve problems with more than one unknown.
- Solve problems involving nonlinear functions, such as rates of change.
- Calculate by applying basic statistical concepts.
- Derive information needed to solve problems if incomplete or implicit information is presented.



The following figure details the percentage of overall jobs in the Washington, D.C. MSA in 1998 and 2008 by required *Applied Mathematics* skills level, as determined by the ACT occupation skills profiles. The second figure provides a similar breakdown for projected annual job openings between 1998 and 2008. These data show that the majority of jobs will require workers with Level 3 *Applied Mathematics* skills.



Proportion of Jobs in the Washington, D.C. MSA by Required Skill Level – Applied Mathematics



Annual Openings in the Washington, D.C. MSA by Required Skill Level – Applied Mathematics

Applied Technology

The *Applied Technology* assessment measures a person's skill in using the basic principles of mechanics, electricity, fluid dynamics, and thermodynamics to solve problems with machines, equipment, and structures found in the workplace. ACT defines the skills levels

associated with this category as follows.

Level 3:

- Understand the operation of basic hand tools, simple machine components, and uncomplicated systems, such as piping systems, simple electrical heaters, or other equipment found in the home, school, or workplace.
- Apply elementary principles underlying the operation of physical systems, such as the workings of plumbing components or simple electrical systems.

Level 4 (in addition to requirements for previous levels):

- Understand the operation of moderately complex tools, machines, and systems, such as appliances, pulley-driven equipment, or piping systems that carry more than one fluid.
- Apply elementary principles underlying the operation of physical systems, such as a block and tackle or cooling fins.

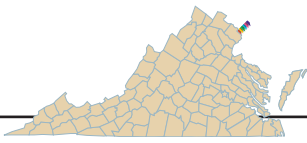
Level 5 (in addition to requirements for previous levels):

- Use the basic principles of mechanics, electricity, thermodynamics, and fluid dynamics in moderate and advanced applications.
- Understand complex machines and systems, such as the operation of gasoline engines, complex appliances, or an electrical system in a building.

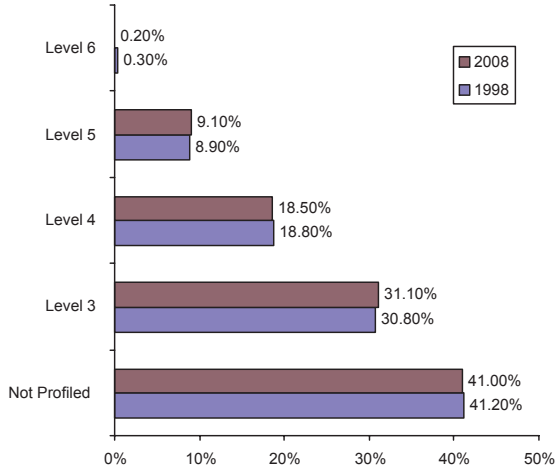
Level 6 (in addition to requirements for previous levels):

- Use principles of mechanics, electricity, thermodynamics, and fluid dynamics interacting in advanced applications such as air conditioning units.
- Troubleshoot complex systems in which a variety of mechanical, electrical, thermal, or flow faults are potential sources of difficult problems.

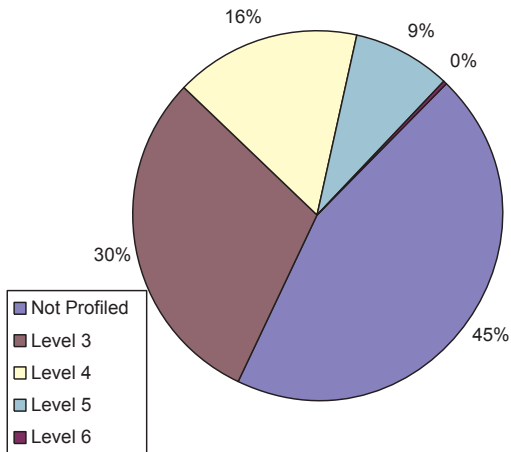
The following figure details the percentage of overall jobs in the Washington, D.C. MSA in 1998 and 2008 by required *Applied Technology* skills level, as determined by the ACT occupation skills profiles. The second figure provides a similar breakdown for projected annual job openings between 1998 and 2008. These data show that the majority of jobs will require workers with Level



3 *Applied Technology* skills. The large “Not Profiled” proportion indicates that ACT has not profiled many of these occupations with respect to *Applied Technology* skills. As a result, it is not possible to include them in the analysis.



Proportion of Jobs in the Washington, D.C. MSA by Required Skill Level – Applied Technology



Annual Openings in the Washington, D.C. MSA by Required Skill Level – Applied Technology

Listening

The *Listening* portion of the *Listening* and *Writing* assessment measures a person’s skill in listening to and conveying information. ACT defines the skills levels associated with this category as follows.

Level 1:

- Write down a small amount of useful information based on a spoken communication.

- Give clues to the gist of the situation or provide sources of further information, but do not include enough information to give the receiver a correct understanding of the situation described in the message.

Level 2 (in addition to requirements for previous levels):

- Correctly write down the basic ideas of a spoken message.
- Give a fair amount of useful information, but may miss some of the important details or incorrectly record some of the information.

Level 3 (in addition to requirements for previous levels):

- Listen to a spoken communication and record messages that are basically correct.
- Present all the primary details and the relationships among them correctly, but may miss one or two pieces of important information.

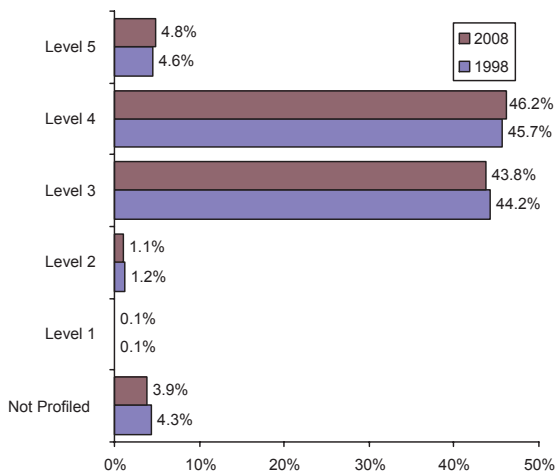
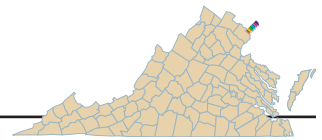
Level 4 (in addition to requirements for previous levels):

- Accurately convey the central idea of a spoken communication.
- Correctly record all the important information and the relationships among pieces of information, but may miss or incorrectly record some details or include irrelevant information.

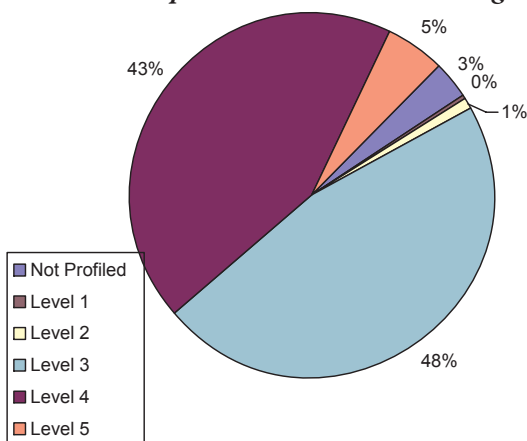
Level 5 (in addition to requirements for previous levels):

- Correctly record all the important information and the relationships among pieces of information from a spoken communication.
- Use supporting details to convey insight into the particular situation the message involves.

The following figure details the percentage of overall jobs in the Washington, D.C. MSA in 1998 and 2008 by required *Listening* skills level, as determined by the ACT occupation skills profiles. The second figure provides a similar breakdown for projected annual job openings between 1998 and 2008. These data show that the majority of jobs will require workers with Level 3 and Level 4 *Listening* skills.



Proportion of Jobs in the Washington, D.C. MSA by Required Skill Level – Listening



Annual Openings in the Washington, D.C. MSA by Required Skill Level – Listening

Locating Information

The *Locating Information* assessment measures a person's skill in using workplace graphics such as diagrams, floor plans, tables, charts, graphs, forms, and instrument gauges. ACT defines the skills levels associated with this category as follows.

Level 3:

- Find one or two pieces of information in a graphic.
- Fill in one or two pieces of information that are missing from a graphic.

Level 4 (in addition to requirements for previous levels):

- Find several pieces of information in graphics.

- Summarize and/or compare information and trends in a single graphic.
- Summarize and/or compare information and trends among more than one graphic by determining the relationships among the graphics.

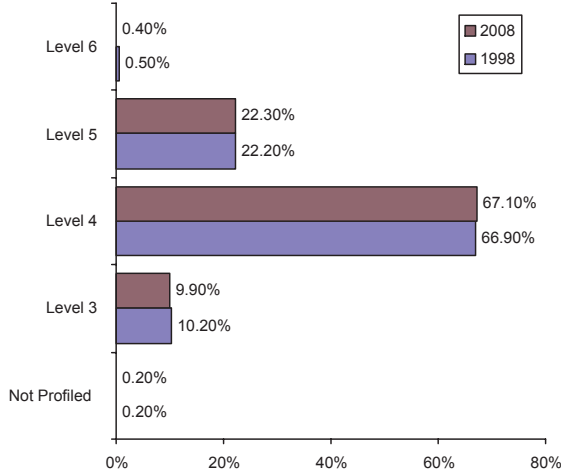
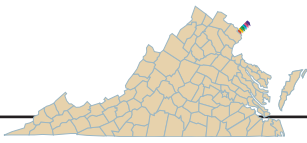
Level 5 (in addition to requirements for previous levels):

- Summarize and/or compare information and trends in a single graphic.
- Sort through distracting information to summarize and/or compare information and trends presented in more than one workplace graphic.

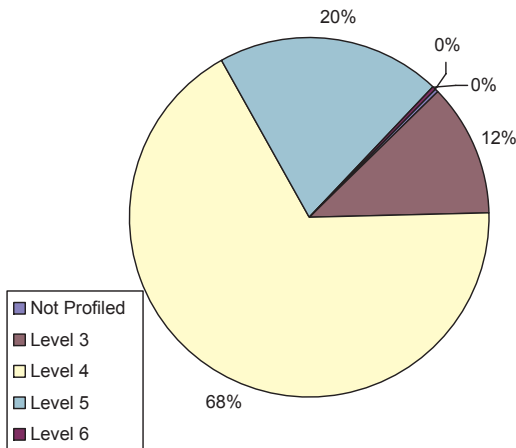
Level 6 (in addition to requirements for previous levels):

- Draw conclusions from the information presented in very detailed graphics.
- Apply information from these types of graphics to specific situations.
- Analyze data within these types of graphics to make decisions and/or predictions requiring judgments based on the information presented.

The following figure details the percentage of overall jobs in the Washington, D.C. MSA in 1998 and 2008 by required *Locating Information* skills level, as determined by the ACT occupation skills profiles. The second figure provides a similar breakdown for projected annual job openings between 1998 and 2008. These data show that the vast majority of jobs will require workers with Level 4 *Locating Information* skills.



Proportion of Jobs in the Washington, D.C. MSA by Required Skill Level – Locating Information



Annual Openings in the Washington, D.C. MSA by Required Skill Level – Locating Information

Observation

The *Observation* assessment measures a person's skill at noticing details and paying attention to instructions and demonstrations. The following is a description of the skills levels associated with this area.

Level 3:

- Pay attention.
- Watch and listen to a strongly cued demonstration or set of instructions.
- Recall a few strongly reinforced details of a process or procedure.

Level 4:

- Sustain focused attention on the demonstrated instructions, process, or procedures.
- Select and attend to important details.
- Recall a few important, moderately reinforced details about the demonstrated process or procedure.

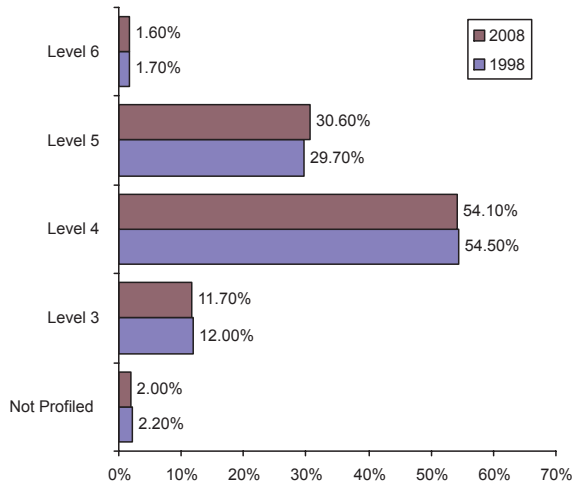
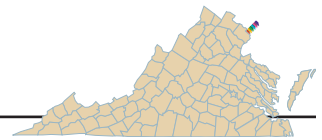
Level 5:

- Focus attention on and recall several important aspects of the information presented.
- Ignore irrelevant background information through selective attention to important details.
- Maintain attention to detail.
- Recall several important details about unfamiliar material.

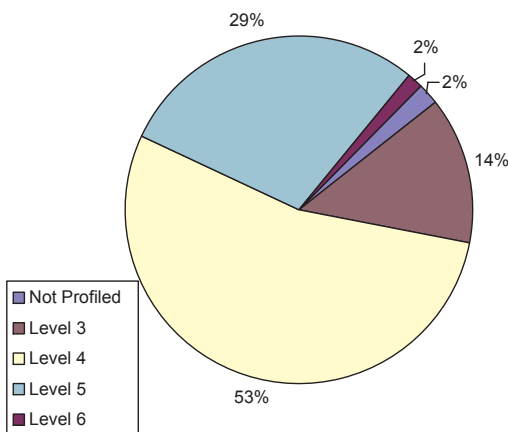
Level 6:

- Notice and remember several details that are relevant to the process or procedure being shown.
- Take in and recall incoming sensory information so it can be used to make predictions, comparisons, or evaluations.
- Visualize how a detail or task fits into the entire process or procedure demonstrated.
- Interpret if-then and cause-effect relationships.

The following figure details the percentage of overall jobs in the Washington, D.C. MSA in 1998 and 2008 by required *Observation* skills level, as determined by the ACT occupation skills profiles. The second figure provides a similar breakdown for projected annual job openings between 1998 and 2008. These data show that the majority of jobs will require workers with Level 4 *Observation* skills.



Proportion of Jobs in the Washington, D.C. MSA by Required Skill Level – Observation



Annual Openings in the Washington, D.C. MSA by Required Skill Level – Observation

Reading for Information

The *Reading for Information* assessment measures a person's skill in reading and using work-related information including instructions, policies, memos, bulletins, notices, letters, manuals, and governmental regulations. ACT defines the skills levels associated with this category as follows.

Level 3:

- Identify uncomplicated key concepts and simple details.
- Recognize the proper placement of a step in a sequence of events, or the proper time to perform a task.

- Identify the meaning of a word that is defined within the document.
- Identify the meaning of a simple word that is not defined within the document.
- Recognize the application of instructions given in the document to situations that are also described in the document.

Level 4:

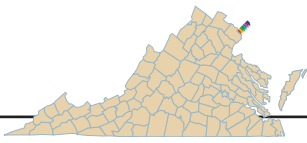
- Identify important details that are less obvious than those in Level 3.
- Recognize the application of more complex instructions, some of which involve several steps, to described situations.
- Recognize cause-effect relationships.
- Determine the meaning of words that are not defined in the document.

Level 5:

- Identify the paraphrased definition of a technical term or jargon that is defined in the document.
- Recognize the application of technical terms or jargon to stated situations.
- Recognize the definition of an acronym that is defined in the document.
- Identify the appropriate definition of a word with multiple meanings.
- Recognize the application of instructions from the document to new situations that are similar to those described in the document.
- Recognize the application of more complex instructions to described situations, including conditionals and procedures with multiple steps.

Level 6:

- Recognize the application of jargon or technical terms to new situations.
- Recognize the application of complex instructions to new situations.
- Recognize, from context, the less common meaning of a word with multiple meanings.
- Generalize from the document situations not described in the document.

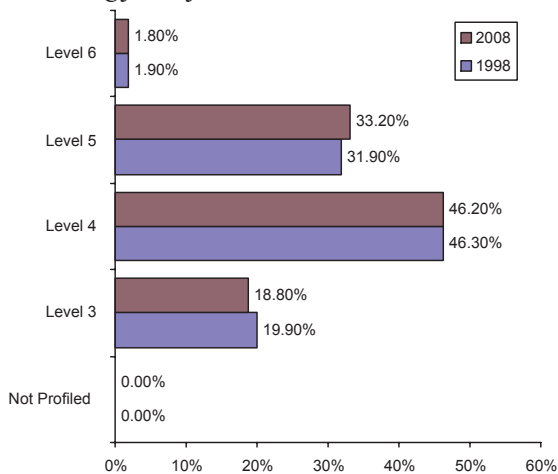


- Identify implied details.
- Explain the rationale behind a procedure, policy, or communication.
- Generalize from the document to a somewhat similar situation.

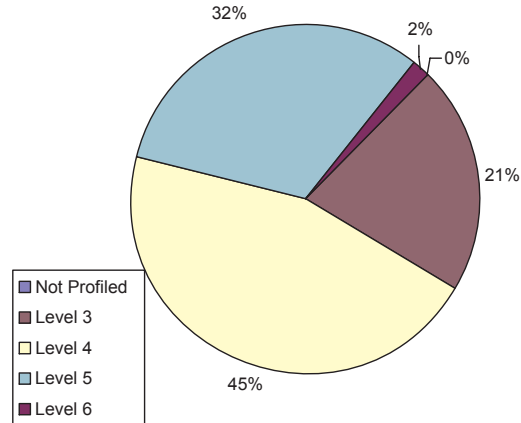
Level 7:

- Recognize the definitions of difficult, uncommon jargon or technical terms, based on the context of the reading materials.
- Figure out the general principles underlying described situations and apply them to situations neither described in nor completely similar to those in the document.

The following figure details the percentage of overall jobs in the Washington, D.C. MSA in 1998 and 2008 by required *Reading for Information* skills level, as determined by the ACT occupation skills profiles. The second figure provides a similar breakdown for projected annual job openings between 1998 and 2008. These data show that the majority of jobs will require workers with Level 4 *Reading for Information* skills.



Proportion of Jobs in the Washington, D.C. MSA by Required Skill Level – Reading for Information



Annual Openings in the Washington, D.C. MSA by Required Skill Level – Reading for Information

Teamwork

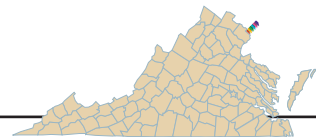
The *Teamwork* assessment measures a person's skill in choosing behaviors and/or actions that simultaneously support relationships within a team and lead toward the accomplishment of work tasks. The following is a description of the skills levels associated with this area.

Level 3:

- Identify team goals and ways to work with other team members to accomplish team goals.
- Recognize that a team is having problems finishing a task and identify the cause of those problems.
- Choose actions that actively support the ideas other team members have for accomplishing team goals.
- Recognize the need for trust and dependability in a team environment.

Level 4:

- Identify the organization of tasks and the time schedule that would help the team reach goals efficiently, creatively, and effectively.
- Select approaches that accept direction from other team members in order to complete tasks and to build and keep up good team relations.
- Identify behaviors that show appreciation for the personal and professional qualities of other team members and respect for their diversity.



- Recognize the need for commitment to quality and sensitivity to customers while pursuing the team goal.

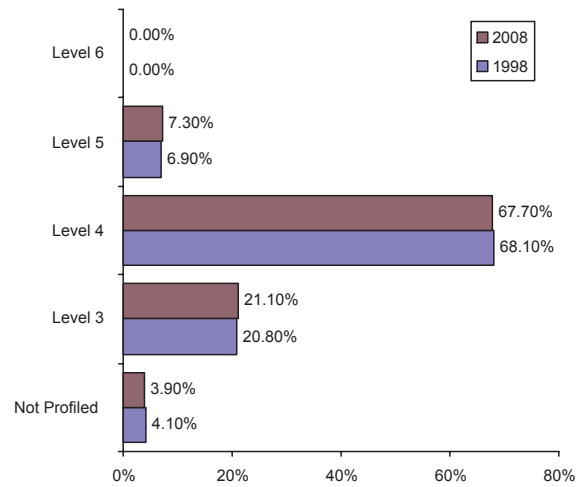
Level 5:

- Identify courses of action that give direction to other team members.
- Determine the best use of team talents to accomplish goals.
- Choose approaches that encourage other team members to improve relationships and/or complete tasks.
- Consider and evaluate the possible effects of alternative behaviors on both team relationships and the completion of tasks.

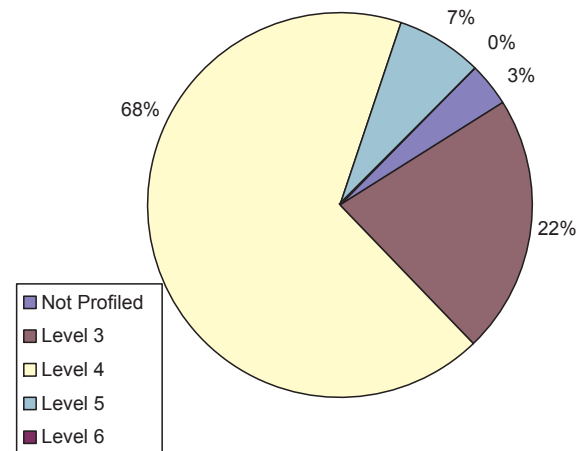
Level 6:

- Identify the focus of team activity and select a new focus if that would help the team meet its goals more effectively.
- Select approaches that show a willingness to give and take direction, as needed, to further team goals (e.g., recognize the organization of team members' tasks that would best serve the larger goals of the team).
- Choose approaches that encourage a team to act as a unit and reach agreement when discussing specific issues.
- Identify actions that would help manage differences of opinion between team members, moving the team toward its goals while valuing and supporting individual diversity.

The following figure details the percentage of overall jobs in the Washington, D.C. MSA in 1998 and 2008 by required *Teamwork* skills level, as determined by the ACT occupation skills profiles. The second figure provides a similar breakdown for projected annual job openings between 1998 and 2008. These data show that the majority of jobs will require workers with Level 4 *Teamwork* skills.



Proportion of Jobs in the Washington, D.C. MSA by Required Skill Level – Teamwork



Annual Openings in the Washington, D.C. MSA by Required Skill Level – Teamwork

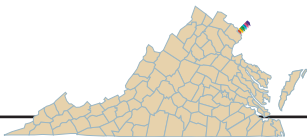
Writing

The *Writing* portion of the *Listening and Writing* assessment measures a person's skill in writing work-related messages. ACT defines the skills levels associated with this category as follows.

Level 1:

- Write messages in English that contain a large number of major grammatical, punctuation, spelling, and/or other mechanical errors making the messages very unclear and inconsistent with standard business English.

Level 2:



- Write messages that are generally understandable, but contain many errors in grammar, punctuation, and/or sentence structure making these messages somewhat difficult to comprehend.

Level 3:

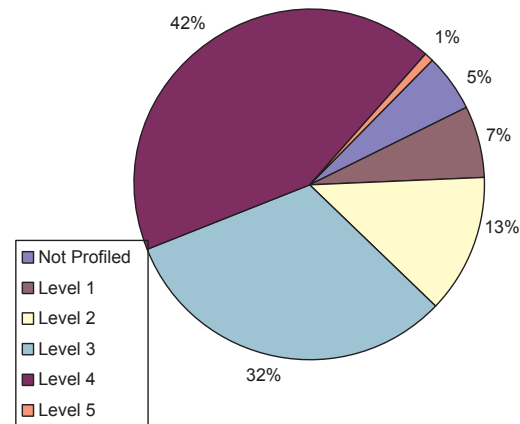
- Write messages that are clear, but may include some incomplete sentences and/or errors in grammar and punctuation.

Level 4:

- Write messages that are clear and generally consistent with standard business English, but may contain a few minor errors in grammar and punctuation, and/or the writing style may lack clear organization and appropriate transitions.

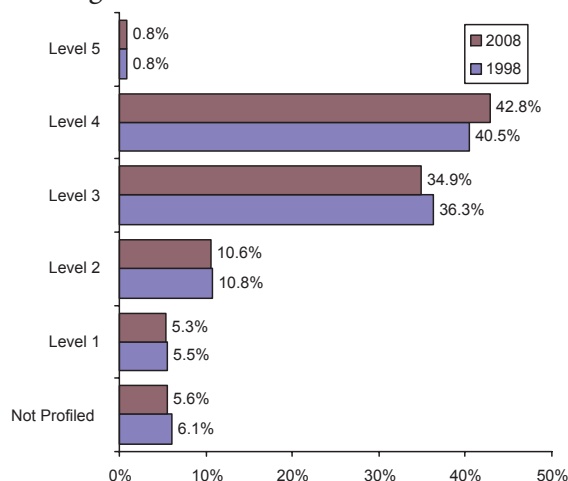
Level 5:

- Write messages that are clear and highly consistent with standard business English.
- Use good sentence structure with a smooth, logical style and no mechanical errors.

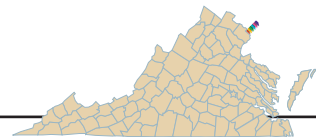


Annual Openings in the Washington, D.C. MSA by Required Skill Level – Writing

The following figure details the percentage of overall jobs in the Washington, D.C. MSA in 1998 and 2008 by required Writing skills level, as determined by the ACT occupation skills profiles. The second figure provides a similar breakdown for projected annual job openings between 1998 and 2008. These data show that the majority of jobs will require workers with Level 3 and Level 4 Writing skills.



Proportion of Jobs in the Washington, D.C. MSA by Required Skill Level – Writing



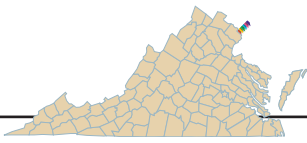
Graduate Data

As a compliment to the prior two sections which detailed the likely demand for skilled workers in the region, this section provides data on the current supply

of graduates within WIA XII. These data reflect number of graduates, by institution, and by academic program for the 2002-2003 academic year.¹

Institution	Program (CIP Code)	Cert. <1 yr.	Cert. >1 <2 yr.	Assoc.	BA	1st Prof.	MA	PH.D.
George Mason Univ	Area Studies, Other (05.0199)	0	0	0	6	0	0	0
George Mason Univ	Communications, General (09.0101)	0	0	0	0	0	2	0
George Mason Univ	Communications, Other (09.9999)	0	0	0	0	0	81	0
George Mason Univ	Computer and Information Sciences, General (11.0101)	0	0	0	183	0	98	0
George Mason Univ	Information Sciences and Systems (11.0401)	0	0	0	0	0	110	0
George Mason Univ	Counselor Education Counseling and Guidance Services (13.1101)	0	0	0	0	0	35	0
George Mason Univ	General Teacher Education, Other (13.1299)	0	0	0	0	0	0	13
George Mason Univ	Health Teacher Education (13.1307)	0	0	0	30	0	0	0
George Mason Univ	Physical Education Teaching and Coaching (13.1314)	0	0	0	14	0	15	0
George Mason Univ	Special Education, General (13.1001)	0	0	0	0	0	81	0
George Mason Univ	Education Administration and Supervision, General (13.0401)	0	0	0	0	0	129	0
George Mason Univ	Curriculum and Instruction (13.0301)	0	0	0	0	0	304	0
George Mason Univ	Education, General (13.0101)	0	0	0	0	0	0	21
George Mason Univ	Teaching English as a Second Language/ Foreign Language (13.1401)	0	0	0	0	0	0	0
George Mason Univ	Engineering, General (14.0101)	0	0	0	0	0	0	0
George Mason Univ	Industrial/Manufacturing Engineering (14.1701)	0	0	0	0	0	9	0

¹ Source: State Council of Higher Education for Virginia, Research Report C1, Completion Summary. Where data for 2002-2003 were not available, 2001-2002 data have been used.



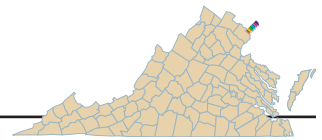
WIA XII

Education Profile

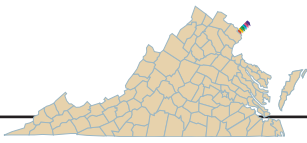
Institution	Program (CIP Code)	Cert. <1 yr.	Cert. >1 <2 yr.	Assoc.	BA	1st Prof.	MA	PH.D.
George Mason Univ	Systems Engineering (14.2701)	0	0	0	20	0	32	0
George Mason Univ	Engineering, Other (14.9999)	0	0	0	0	0	0	27
George Mason Univ	Civil Engineering, Other (14.0899)	0	0	0	17	0	7	0
George Mason Univ	Computer Engineering (14.0901)	0	0	0	15	0	12	0
George Mason Univ	Electrical, Electronics and Communication Engineering (14.1001)	0	0	0	30	0	39	3
George Mason Univ	Foreign Languages and Literatures, General (16.0101)	0	0	0	30	0	14	0
George Mason Univ	Juridical Science/Legal Specialization(LL. M.,M.C.L.,J.S.D./S.J.D.) (22.0104)	0	0	0	0	0	1	0
George Mason Univ	Law and Legal Studies, Other (22.0199)	0	0	0	0	0	5	0
George Mason Univ	Law (LL.B., J.D.) (22.0101)	0	0	0	0	183	0	0
George Mason Univ	English Language and Literature, General (23.0101)	0	0	0	162	0	0	0
George Mason Univ	English Creative Writing (23.0501)	0	0	0	0	0	25	0
George Mason Univ	English Literature (British and Commonwealth) (23.0801)	0	0	0	0	0	45	0
George Mason Univ	Speech and Rhetorical Studies (23.1001)	0	0	0	273	0	0	0
George Mason Univ	Liberal Arts and Sciences/Liberal Studies (24.0101)	0	0	0	138	0	0	0
George Mason Univ	Humanities/Humanistic Studies (24.0103)	0	0	0	0	0	0	5
George Mason Univ	Liberal Art and Sciences, General Studies and Humanities, Other (24.0199)	0	0	0	144	0	0	0
George Mason Univ	Biological Sciences/Life Sciences, Other (26.9999)	0	0	0	0	0	2	12
George Mason Univ	Biology, General (26.0101)	0	0	0	120	0	13	0
George Mason Univ	Mathematical Statistics (27.0501)	0	0	0	0	0	13	0
George Mason Univ	Mathematics (27.0101)	0	0	0	18	0	5	0

Education Profile

WIA XII



Institution	Program (CIP Code)	Cert. <1 yr.	Cert. >1 <2 yr.	Assoc.	BA	1st Prof.	MA	PH.D.
George Mason Univ	Multi/Interdisciplinary Studies, Other (30.9999)	0	0	0	2	0	15	0
George Mason Univ	Peace and Conflict Studies (30.0501)	0	0	0	0	0	26	9
George Mason Univ	Mathematics and Computer Science (30.0801)	0	0	0	0	0	9	12
George Mason Univ	Gerontology (30.1101)	0	0	0	0	0	0	0
George Mason Univ	Philosophy (38.0101)	0	0	0	11	0	0	0
George Mason Univ	Physics, General (40.0801)	0	0	0	6	0	0	0
George Mason Univ	Geology (40.0601)	0	0	0	6	0	0	0
George Mason Univ	Chemistry, General (40.0501)	0	0	0	15	0	2	0
George Mason Univ	Physics, Other (40.0899)	0	0	0	0	0	4	0
George Mason Univ	Psychology, General (42.0101)	0	0	0	265	0	49	16
George Mason Univ	Law Enforcement/Police Science (43.0107)	0	0	0	73	0	0	0
George Mason Univ	Public Policy Analysis (44.0501)	0	0	0	0	0	6	14
George Mason Univ	Social Work (44.0701)	0	0	0	26	0	0	0
George Mason Univ	Public Administration (44.0401)	0	0	0	21	0	74	1
George Mason Univ	Public Administration and Services, Other (44.9999)	0	0	0	0	0	4	0
George Mason Univ	Economics, General (45.0601)	0	0	0	102	0	9	14
George Mason Univ	Anthropology (45.0201)	0	0	0	26	0	0	0
George Mason Univ	Geography (45.0701)	0	0	0	6	0	12	0
George Mason Univ	History, General (45.0801)	0	0	0	73	0	33	0
George Mason Univ	International Relations and Affairs (45.0901)	0	0	0	4	0	70	0



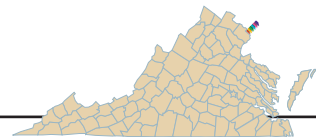
WIA XII

Education Profile

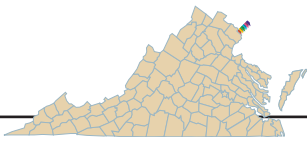
Institution	Program (CIP Code)	Cert. <1 yr.	Cert. >1 <2 yr.	Assoc.	BA	1st Prof.	MA	PH.D.
George Mason Univ	Political Science, General (45.1001)	0	0	0	9	0	0	0
George Mason Univ	Political Science and Government, Other (45.1099)	0	0	0	156	0	0	0
George Mason Univ	Sociology (45.1101)	0	0	0	58	0	8	0
George Mason Univ	Visual and Performing Arts (50.0101)	0	0	0	19	0	9	0
George Mason Univ	Music - General Performance (50.0903)	0	0	0	26	0	0	0
George Mason Univ	Music, Other (50.0999)	0	0	0	0	0	9	0
George Mason Univ	Music, General (50.0901)	0	0	0	0	0	12	0
George Mason Univ	Art, General (50.0701)	0	0	0	80	0	0	0
George Mason Univ	Drama/Theater Arts, General (50.0501)	0	0	0	22	0	0	0
George Mason Univ	Dance (50.0301)	0	0	0	9	0	2	0
George Mason Univ	Hospital/Health Facilities Administration (51.0702)	0	0	0	0	0	0	0
George Mason Univ	Health System/Health Services Administration (51.0701)	0	0	0	0	0	16	0
George Mason Univ	Medical Technology (51.1005)	0	0	0	5	0	0	0
George Mason Univ	Nursing (R.N. Training) (51.1601)	0	0	0	168	0	72	5
George Mason Univ	Health Professions and Related Sciences, Other (51.9999)	0	0	0	19	0	0	0
George Mason Univ	Management Information Systems and Business Data Processing, General (52.1201)	0	0	0	0	0	0	0
George Mason Univ	Business Marketing and Marketing Management (52.1401)	0	0	0	88	0	0	0
George Mason Univ	Business Management and Administrative Services, Other (52.9999)	0	0	0	396	0	0	0
George Mason Univ	Business Administration and Management, General (52.0201)	0	0	0	83	0	65	0
George Mason Univ	Business, General (52.0101)	0	0	0	3	0	0	0

Education Profile

WIA XII



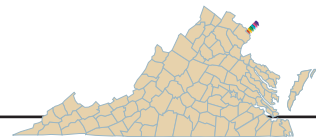
Institution	Program (CIP Code)	Cert. <1 yr.	Cert. >1 <2 yr.	Assoc.	BA	1st Prof.	MA	PH.D.
George Mason Univ	Business Administration and Management, Other (52.0299)	0	0	0	0	0	28	0
George Mason Univ	Accounting (52.0301)	0	0	0	122	0	0	0
George Mason Univ	Finance, General (52.0801)	0	0	0	112	0	0	0
Marymount Univ	Fashion Merchandising (08.0102)	0	0	0	14	0	0	0
Marymount Univ	Communications, General (09.0101)	0	0	0	28	0	0	0
Marymount Univ	Computer and Information Sciences, General (11.0101)	0	0	0	41	0	0	0
Marymount Univ	Computer Science (11.0701)	0	0	0	6	0	7	0
Marymount Univ	Educational Psychology (13.0802)	0	0	0	12	0	0	0
Marymount Univ	Education Administration and Supervision, Other (13.0499)	0	0	0	0	0	11	0
Marymount Univ	Elementary Teacher Education (13.1202)	0	0	0	0	0	65	0
Marymount Univ	Secondary Teacher Education (13.1205)	0	0	0	0	0	8	0
Marymount Univ	Education of the Specific Learning Disabled (13.1011)	0	0	0	0	0	11	0
Marymount Univ	Counselor Education Counseling and Guidance Services (13.1101)	0	0	0	0	0	11	0
Marymount Univ	Teaching English as a Second Language/ Foreign Language (13.1401)	0	0	0	0	0	9	0
Marymount Univ	Paralegal/Legal Assistant (22.0103)	0	0	0	5	0	15	0
Marymount Univ	English Language and Literature, General (23.0101)	0	0	0	10	0	1	0
Marymount Univ	Liberal Arts and Sciences/Liberal Studies (24.0101)	0	0	3	33	0	0	0
Marymount Univ	Biology, General (26.0101)	0	0	0	23	0	0	0
Marymount Univ	Miscellaneous Biological Specializations, Other (26.0699)	0	0	0	1	0	0	0
Marymount Univ	Mathematics (27.0101)	0	0	0	3	0	0	0



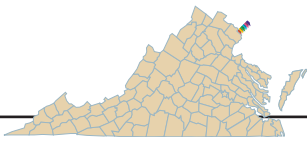
Institution	Program (CIP Code)	Cert. <1 yr.	Cert. >1 <2 yr.	Assoc.	BA	1st Prof.	MA	PH.D.
Marymount Univ	Parks, Recreation and Leisure Studies (31.0101)	0	0	0	4	0	0	0
Marymount Univ	Sport and Fitness Administration/ Management (31.0504)	0	0	0	2	0	0	0
Marymount Univ	Athletic Training and Sports Medicine (31.0503)	0	0	0	1	0	0	0
Marymount Univ	Religion/Religious Studies (38.0201)	0	0	0	2	0	0	0
Marymount Univ	Psychology, General (42.0101)	0	0	0	2	0	0	0
Marymount Univ	Counseling Psychology (42.0601)	0	0	0	0	0	28	0
Marymount Univ	Industrial and Organizational Psychology (42.0901)	0	0	0	5	0	0	0
Marymount Univ	Social Psychology (42.1601)	0	0	0	29	0	0	0
Marymount Univ	Psychology, Other (42.9999)	0	0	0	0	0	38	0
Marymount Univ	Sociology (45.1101)	0	0	0	10	0	0	0
Marymount Univ	Political Science, General (45.1001)	0	0	0	8	0	0	0
Marymount Univ	Economics, General (45.0601)	0	0	0	2	0	0	0
Marymount Univ	Criminology (45.0401)	0	0	0	15	0	0	0
Marymount Univ	History, General (45.0801)	0	0	0	11	0	0	0
Marymount Univ	Graphic Design, Commercial Art and Illustration (50.0402)	0	0	0	27	0	0	0
Marymount Univ	Fashion Design and Illustration (50.0407)	0	0	0	3	0	0	0
Marymount Univ	Interior Design (50.0408)	0	0	0	23	0	9	0
Marymount Univ	Art, General (50.0701)	0	0	0	7	0	0	0
Marymount Univ	Physical Therapy (51.2308)	0	0	0	0	0	22	0
Marymount Univ	Health Professions and Related Sciences, Other (51.9999)	0	0	0	0	0	5	0

Education Profile

WIA XII



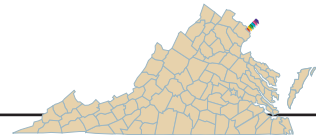
Institution	Program (CIP Code)	Cert. <1 yr.	Cert. >1 <2 yr.	Assoc.	BA	1st Prof.	MA	PH.D.
Marymount Univ	Nursing (R.N. Training) (51.1601)	0	0	76	0	0	0	0
Marymount Univ	Nursing Administration (Post-R.N.) (51.1602)	0	0	0	17	0	1	0
Marymount Univ	Nursing, Family Practice (Post-R.N.) (51.1605)	0	0	0	0	0	10	0
Marymount Univ	Nursing, Other (51.1699)	0	0	0	0	0	4	0
Marymount Univ	Health System/Health Services Administration (51.0701)	0	0	0	1	0	11	0
Marymount Univ	Business Administration and Management, General (52.0201)	0	0	0	23	0	91	0
Marymount Univ	Business Administration and Management, Other (52.0299)	0	0	0	2	0	0	0
Marymount Univ	Accounting (52.0301)	0	0	0	3	0	0	0
Marymount Univ	Finance, General (52.0801)	0	0	0	11	0	0	0
Marymount Univ	Human Resources Management (52.1001)	0	0	0	5	0	28	0
Marymount Univ	Business Marketing and Marketing Management (52.1401)	0	0	0	14	0	0	0
Marymount Univ	Business Management and Administrative Services, Other (52.9999)	0	0	0	0	0	38	0
Marymount Univ	Organizational Behavior Studies (52.1003)	0	0	0	0	0	36	0
Marymount Univ	International Business (52.1101)	0	0	0	10	0	0	0
Marymount Univ	Management Information Systems and Business Data Processing, General (52.1201)	0	0	0	0	0	26	0
Northern Virginia CC	Agricultural Business and Management, General (01.0101)	0	0	12	0	0	0	0
Northern Virginia CC	Agricultural Business and Management, Other (01.0199)	0	0	27	0	0	0	0
Northern Virginia CC	Radio and Television Broadcasting Tech./ Technician (10.0104)	0	9	0	0	0	0	0
Northern Virginia CC	Computer and Information Sciences, General (11.0101)	0	0	82	0	0	0	0
Northern Virginia CC	Special Education, Other (13.1099)	0	2	20	0	0	0	0



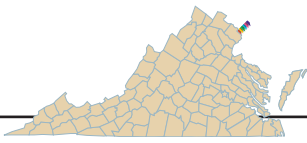
Institution	Program (CIP Code)	Cert. <1 yr.	Cert. >1 <2 yr.	Assoc.	BA	1st Prof.	MA	PH.D.
Northern Virginia CC	Engineering, General (14.0101)	0	0	32	0	0	0	0
Northern Virginia CC	Architectural Engineering Tech./Technician (15.0101)	0	12	25	0	0	0	0
Northern Virginia CC	Civil Engineering/Civil Tech./Technician (15.0201)	0	0	5	0	0	0	0
Northern Virginia CC	Electrical and Electronic Engin.-Related Technol./Technicians, Other (15.0399)	0	5	3	0	0	0	0
Northern Virginia CC	Environmental Control Technol./Technicians, Other (15.0599)	0	4	4	0	0	0	0
Northern Virginia CC	Mechanical Engineering-Related Technol./Technicians, Other (15.0899)	0	1	0	0	0	0	0
Northern Virginia CC	Engineering-Related Technol./Technicians, Other (15.9999)	0	0	1	0	0	0	0
Northern Virginia CC	Liberal Arts and Sciences/Liberal Studies (24.0101)	0	0	216	0	0	0	0
Northern Virginia CC	General Studies (24.0102)	0	0	673	0	0	0	0
Northern Virginia CC	Biological and Physical Sciences (30.0101)	0	0	72	0	0	0	0
Northern Virginia CC	Parks, Recreation and Leisure Facilities Management (31.0301)	0	0	5	0	0	0	0
Northern Virginia CC	Protective Services, Other (43.9999)	0	42	80	0	0	0	0
Northern Virginia CC	Vehicle and Mobile Equipment Mechanics and Repairers, Other (47.0699)	0	8	32	0	0	0	0
Northern Virginia CC	Graphic and Printing Equipment Operator, General (48.0201)	0	0	55	0	0	0	0
Northern Virginia CC	Transportation and Materials Moving Workers, Other (49.9999)	0	0	1	0	0	0	0
Northern Virginia CC	Visual and Performing Arts (50.0101)	0	0	13	0	0	0	0
Northern Virginia CC	Interior Design (50.0408)	0	0	7	0	0	0	0
Northern Virginia CC	Design and Applied Arts, Other (50.0499)	0	11	0	0	0	0	0
Northern Virginia CC	Visual and Performing Arts, Other (50.9999)	0	0	19	0	0	0	0
Northern Virginia CC	Mental Health Services, Other (51.1599)	505	3	11	0	0	0	0

Education Profile

WIA XII

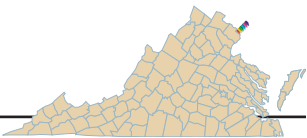


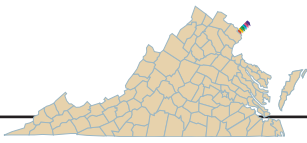
Institution	Program (CIP Code)	Cert. <1 yr.	Cert. >1 <2 yr.	Assoc.	BA	1st Prof.	MA	PH.D.
Northern Virginia CC	Emergency Medical Tech./Technician (51.0904)	0	0	13	0	0	0	0
Northern Virginia CC	Medical Records Tech./Technician (51.0707)	0	0	8	0	0	0	0
Northern Virginia CC	Surgical/Operating Room Technician (51.0909)	0	9	0	0	0	0	0
Northern Virginia CC	Respiratory Therapy Technician (51.0908)	0	0	6	0	0	0	0
Northern Virginia CC	Medical Laboratory Technician (51.1004)	0	0	6	0	0	0	0
Northern Virginia CC	Medical Radiologic Tech./Technician (51.0907)	0	0	25	0	0	0	0
Northern Virginia CC	Dental Hygienist (51.0602)	0	0	18	0	0	0	0
Northern Virginia CC	Nursing (R.N. Training) (51.1601)	0	0	106	0	0	0	0
Northern Virginia CC	Physical Therapy (51.2308)	0	0	14	0	0	0	0
Northern Virginia CC	Business, General (52.0101)	0	70	134	0	0	0	0
Northern Virginia CC	Business Administration and Management, General (52.0201)	0	0	398	0	0	0	0
Northern Virginia CC	Administrative Assistant/Secretarial Science, General (52.0401)	0	9	62	0	0	0	0
Northern Virginia CC	Management Information Systems and Business Data Processing, General (52.1201)	0	10	285	0	0	0	0



WIA XII Training Providers List

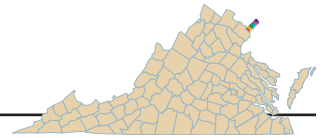
Provider Name	Contact Information	List of Programs/Courses
Applied Career Training	1100 Wilson Blvd. Mall Level Arlington VA 22209 Phone: 703-527-6660 Web: www.healthtraining.com	Dental Assisting Medical Assisting Medical Office Administration Pharmacy Technician
Community Preservation and Development Corporation Inc	3606 Buckman Road Suite 103 Alexandria VA 22309 Phone: 703-360-6094 Email: ljohnson@cpdc.org Web: www.cpdc.org	Office Technology
Northern Virginia Community College - Alexandria Campus	3001 North Beauregard Street Alexandria VA 22311 Phone: 703-845-6240 Web: www.nvcc.vccs.edu/alexandria	College Courses
Service Source	6295 Edsall Road, Suite 175 Alexandria VA 22312-2670 Phone: 703-461-6000 Web: www.ourpeoplework.org	Computer Applications Training Customer Service Training
Spectrum Academy	25 South Quaker Lane Suite 15 Alexandria VA 22314 Phone: 703-370-9700 Email: info@learnatspectrum.com Web: www.learnatspectrum.com	Cosmetology Nail Technology





V. Summary and Conclusions

Although WIA XII's population faces greater challenges with respect to English proficiency than is typical for the state, it also true that it experiences less unemployment, is better educated, younger, and growing at a much faster rate as well. Projections indicate that each of the characteristics is likely to persist into the future. It can also be anticipated that employment increases in the Service sector – specifically, technology, health care and education – will drive much of the demand for trained workers between 1998 and 2008.



Average Weekly Wage

Arlington County

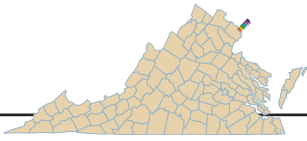
INDUSTRY SECTOR	2002 (\$)
****TOTAL****	1,103
AGRICULTURE	D
MINING	D
UTILITIES	D
CONSTRUCTION	991
MANUFACTURING	1,293
TRADE-WHOLESALE	1,625
TRADE-RETAIL	503
TRANSPORTATION	1,394
INFORMATION	1,474
FINANCE/INSURNC	1,832
REAL ESTATE	969
PROF/TECH SERV	1,453
MANAGMNT OF COS	1,644
ADMIN/WASTE SER	507
EDUCATIONAL SER	809
HEALTH CARE	796
ARTS/ENTER/REC	323
ACCOMMDATN/FOOD	366
OTHER SERVICES	855
GOVT TOTAL	1,288
GOVT FEDERAL	1,436
GOVT STATE	883
GOVT LOCAL	861
UNCLASSIFIED	0

Alexandria city

INDUSTRY SECTOR	2002 (\$)
****TOTAL****	903
AGRICULTURE	D
MINING	D
UTILITIES	D
CONSTRUCTION	844
MANUFACTURING	707
TRADE-WHOLESALE	1,002
TRADE-RETAIL	539
TRANSPORTATION	590
INFORMATION	1,374
FINANCE/INSURNC	1,153
REAL ESTATE	648
PROF/TECH SERV	1,347
MANAGMNT OF COS	1,790
ADMIN/WASTE SER	654
EDUCATIONAL SER	812
HEALTH CARE	792
ARTS/ENTER/REC	505
ACCOMMDATN/FOOD	362
OTHER SERVICES	921
GOVT TOTAL	1,051
GOVT FEDERAL	1,336
GOVT STATE	647
GOVT LOCAL	807
UNCLASSIFIED	0

"D" indicates nondisclosed data.

Source: Covered Employment and Wage data, Annualized 2002.



Unemployment Rate Trends

Arlington County

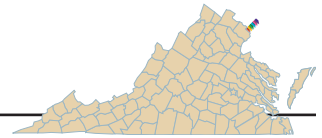
Year	Rate
2002	2.7
2001	2.2
2000	1.1
1999	1.6
1998	1.7

Year	Rate
1997	2.5
1996	3.2
1995	3.5
1994	3.5
1993	4.4

Alexandria city

Year	Rate
2002	3.3
2001	2.6
2000	1.5
1999	2.3
1998	2.3

Year	Rate
1997	3.2
1996	4.0
1995	4.4
1994	4.5
1993	5.9



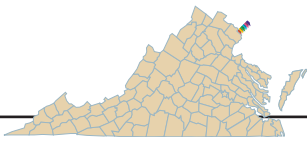
Population by Age

Arlington County

	1990	2000	2010	2020	2030
0-14	22,296	26,773	30,538	33,582	36,293
15-24	23,830	24,175	25,854	27,093	27,960
25-34	44,150	47,675	49,493	50,038	51,317
35-44	30,986	32,664	35,707	37,622	38,971
45-54	18,319	25,841	28,482	30,676	32,738
55+	31,355	32,325	34,927	35,989	36,721
Total	170,936	189,453	205,000	215,000	224,000

Alexandria city

	1990	2000	2010	2020	2030
0-14	14,657	18,637	22,543	25,361	27,519
15-24	15,041	14,658	16,989	18,639	19,741
25-34	30,065	32,571	35,870	37,535	39,221
35-44	20,378	23,186	27,011	29,365	30,877
45-54	11,769	17,641	20,803	23,330	25,467
55+	19,273	21,590	25,085	27,070	28,474
Total	111,183	128,283	148,300	161,300	171,300



Employment by Industry

Arlington County

INDUSTRY SECTOR	2002
****TOTAL****	153,320
AGRICULTURE	D
MINING	D
UTILITIES	D
CONSTRUCTION	3,881
MANUFACTURING	731
TRADE-WHOLESALE	1,901
TRADE-RETAIL	9,097
TRANSPORTATION	8,285
INFORMATION	8,448
FINANCE/INSURNC	2,797
REAL ESTATE	3,978
PROF/TECH SERV	28,897
MANAGMNT OF COS	3,176
ADMIN/WASTE SER	9,757
EDUCATIONAL SER	4,187
HEALTH CARE	7,651
ARTS/ENTER/REC	1,031
ACCOMMDATN/FOOD	12,688
OTHER SERVICES	7,927
GOVT TOTAL	38,690
GOVT FEDERAL	28,704
GOVT STATE	406
GOVT LOCAL	9,580
UNCLASSIFIED	0

Alexandria city

INDUSTRY SECTOR	2002
****TOTAL****	89,913
AGRICULTURE	D
MINING	D
UTILITIES	D
CONSTRUCTION	3,637
MANUFACTURING	1,508
TRADE-WHOLESALE	2,209
TRADE-RETAIL	8,732
TRANSPORTATION	1,779
INFORMATION	2,400
FINANCE/INSURNC	3,551
REAL ESTATE	3,026
PROF/TECH SERV	13,811
MANAGMNT OF COS	573
ADMIN/WASTE SER	5,884
EDUCATIONAL SER	1,624
HEALTH CARE	5,821
ARTS/ENTER/REC	671
ACCOMMDATN/FOOD	7,963
OTHER SERVICES	9,505
GOVT TOTAL	16,689
GOVT FEDERAL	8,016
GOVT STATE	1,022
GOVT LOCAL	7,651
UNCLASSIFIED	0

"D" indicates nondisclosed data.

Source: Covered Employment and Wage data, Annualized 2002.